The RHODE ISLAND MEDICAL JOURNAL

VOL. XXXIV JANUARY, 1951 NO. 1

DIAGNOSIS AND TREATMENT OF HEART DISEASE

An Abstract of a Series of Six Lectures Sponsored by R. I. State Department of Health and the Postgraduate Committee of the R. I. Medical Society for Physicians.

PREPARED BY FREDERICK EASTON, III, M.D.

The series of six lectures on Heart Problems given last Fall under the auspices of the Rhode Island State Department of Health and the Postgraduate Education Committee of the Rhode Island Medical Society covered this broad and important subject in an authoritative and interesting manner. The speakers were, of course, highly qualified both by knowledge and ability to impart their information clearly and convincingly. The profession, anticipating this, attended in goodly numbers.

Unfortunately there were no written papers, all the talks being given from notes and lantern slides. This makes for a lively presentation, but leaves no permanent written record. We have tried to atone for this by having a qualified physician, well versed in internal medicine, take careful notes. We are indebted to Frederick Easton, III, M.D., Senior Resident in Medicine at Rhode Island Hospital for furnishing us with the detailed summaries presented below. THE EDITOR

I. THE PREVENTIVE ASPECTS OF HEART DISEASE

An Abstract of the lecture given on September 18, 1950, by David B. Rutstein, M.D., of Boston, Massachusetts, Professor of Preventive Medicine, Harvard Medical School.

Congenital Heart Disease

Until about 10 years ago congenital heart disease was felt to be an act of God. It is now an accepted fact that German measles in the pregnant woman during the early months of pregnancy is a causative agent in certain cases of congenital heart disease. It has been found that the incidence of congenital heart disease tends to correlate with the seasonal incidence of German measles. Because of this relationship between German measles in the pregnant woman and congenital heart disease certain preventative measures can be taken. In a closed community such as a girl's school it is probably best if an outbreak of German measles is not controlled, thus letting the girls have German measles while young and non-pregnant. Exposure of pregnant women to German measles should be vigorously prevented. When a woman in the early months of pregnancy develops rubella, interruption of pregnancy has to be considered.

Local heart associations should take over the important function of identification of suspected cases of congenital heart disease and the referral of these cases to the proper hospitals or specialists.

Diphtheritic Heart Disease

Diphtheritic heart disease can be completely prevented by careful immunization programs for the children and by early recognition and treatment of diphtheria in the adult.

Luetic Heart Disease

This also can be completely prevented by early and thorough treatment of all cases of primary and secondary lues and by careful, thorough follow-up programs.

Hyperthyroid Heart Disease

This is easily preventable by early recognition and treatment of the underlying hyperthyroidism.

Hypertensive Heart Disease

The rare forms of hypertensive heart disease secondary to other conditions should be recognized and treated if possible by removal of the pheochromocytoma or ovarian tumor or by treatment of unilateral renal disease, irradiation of pituitary tumors or by the surgical correction of coarctation of the aorta.

Hypertensive heart disease secondary to essential hypertension is of course much more common and difficult to prevent. By preventing obesity and by weight reduction when obesity is present, certain cases of hypertensive heart disease could perhaps be averted.

concluded on next page

Arteriosclerotic Heart Disease

Prevention here is again difficult. By preventing obesity and treating the hypothyroidism which is found in a small number of patients with arteriosclerotic heart disease some progress might be made.

Rarer Forms of Heart Disease

Constrictive pericarditis is preventable by early recognition and by referral of the patient to a capable surgeon. Beri-beri heart disease is preventable by adequate nutrition.

Rheumatic Heart Disease

Certain steps can be taken to reduce the incidence of rheumatic heart disease. By preventing beta hemolytic strep infections in both non-rheumatics and in patients with a previous history of rheumatic fever, certain cases of rheumatic heart disease may be prevented. However, the actual prevention of rheumatic heart disease is difficult because many adults with far-advanced rheumatic heart disease give no history of previous rheumatic fever, and also the severity of the valvular damage does not correlate with the number of previous attacks of rheumatic fever but does correlate with the length of time since the first attack, thus scarring probably goes on after the first attack regardless of recurrences. Certainly in a hospital steps should be taken to prevent cross infection. By treating strep infections (early and adequately) in people without known rheumatic fever or rheumatic heart disease (penicillin daily for 10 days) the subsequent development of rheumatic fever has been shown to be reduced. Early treatment is essential because penicillin late in the course of the strep infection is valueless. The problem of getting early and adequate treatment of strep infections to the community must be considered. By educating the doctors and the population, by providing means to defray the expense (approx. $10), and by alerting school health services so that suspected cases of strep infection are immediately sent to their local physician, much can be done. The proper diagnosis of strep infections is, of course, vital. Treatment with 10 days of penicillin should be given to patients with scarlet fever; to patients with a sore throat following contact with a known strep infection; to patients with diseases known to be caused often by strep, such as otitis media; to any person who has a suspicious infection and who gives a strong family history of rheumatic fever; and to patients with sore throat, fever, edema of pharynx, exudate on the tonsils, and adenopathy, since at least 70% of these are due to hemolytic strep.

In the patient with known rheumatic heart disease, treatment of a prophylactic nature should be given during tooth extraction, minor operations, and childbirth to prevent the possible development of SBE.

Lastly, since poor housing is known to breed rheumatic fever, community housing projects should help out in the long term fight against rheumatic fever.

II. AN EVALUATION OF METHODS OF TREATMENT OF HYPERTENSION

An Abstract of the lecture given on September 25, 1950, by George Perera, M.D., of New York City, Associate Professor of Medicine, Columbia University; Assistant Attending Physician, Presbyterian Hospital.

A diagnosis of hypertension cannot be made by taking an isolated blood pressure reading. Blood pressure is labile, fluctuating frequently. Also our method of taking blood pressure is inaccurate, with an obese arm high readings are often obtained; and yet high readings even in the non-obese do not in themselves prove the presence of hypertensive disease. Contrariwise early hypertension may have normal readings. The finding of repeated elevated diastolic readings makes the diagnosis of hypertension tenable.

Such things as pheochromocytoma and coarctation of the aorta must be excluded—the latter is usually easily excluded by feeling the femoral artery pulsations.

In hypertension overtreatment is worse than undertreatment. Discretion must be used in what to tell the hypertensive patient. Elevated blood pressure does not kill people but the associated arterial disease may. Often some of the patients' symptoms disappear following reassurance — approximately ⅔ of the headaches and ⅓ of the cases of retinitis improve without intensive therapy. The finding of papilledema is probably the worst prognostic omen.

The treatment of hypertension may be considered in three phases—(1) the patient (2) the symptoms and complications (3) the disease itself.

So far as the patient is concerned, you should usually tell him that he has hypertension, because if you don't someone may tell him not as well as you can. Great tact is essential. Actually the truth

is not discouraging — hypertension is usually a chronic disorder of 15-20 years mean duration. The patient should be told to avoid irregular peaks of exertion and to try to keep his emotions under control. In all activities, he should reduce the ceiling rather than the floor. Alcohol in moderation should probably not be prohibited while tobacco is no good unless the patient is worse without it than with it. In the hypertensive woman, pregnancy would seem to be an additional risk but each case has to be judged on its own merits. Physical examinations should on an average be done every ½-1 year—it is best not to do them too often.

In treating the symptoms headache is one of the greatest problems. 30% of the patients have no headaches while 6% are incapacitated by them. Sedates may be necessary in some cases, coffee helps others. Elevation of the head of the bed, phlebotomy, and lumbar puncture are other measures that may be tried.

The treatment of the disease for the most part revolves around sympathectomy and the rice or low salt diet. The decision for either of these should usually be made by the patient after he has been presented with all the facts. Rigid salt restriction does seem to accomplish something—there is often an improvement in blood pressure readings, the retinae may improve, and the patient may feel better. However, the rice diet imposes a burden on the kidneys and it's extremely difficult to keep the patient on it. In regard to sympathectomy, the risks of the operation are now small but the patient has to spend several weeks in the hospital. With the majority of patients there is some blood pressure drop following sympathectomy but after five years only about 25% still have an appreciably lowered blood pressure. The best results come in the worst cases and of course preexisting organic renal damage is unchanged by the procedure. Sympathectomy seems most valuable in the early malignant hypertensive where the life expectancy seems to be increased and also in the hypertensive with intractable headache. In other cases this procedure is a gamble. Finally weight reduction alone in the obese hypertensive is often associated with striking lowering of blood pressure.

III. TYPES OF CONGENITAL HEART DISEASE AMENABLE TO SURGERY

An Abstract of the lecture given on October 2, 1950, by Robert E. Gross, M.D., of Boston, Massachusetts, the William E. Ladd Professor of Surgery, Harvard Medical School, and Surgeon-in-Chief, Children's Medical Center, Boston.

Patent ductus arteriosus can usually be diagnosed by the characteristic murmur, wide pulse pressure, left axis deviation by EKG and cardiac enlargement by x-ray. After surgical correction of this anomaly, the diastolic blood pressure rises, the heart decreases in size, body development progresses, and cardiac output falls.

The Tetralogy of Fallot is characterized by overriding of the aorta over a septal defect, pulmonary stenosis, and hypertrophy of the right ventricle. Surgical correction is aimed at increasing the blood flow to the lungs, and this may be done by anastamosing the left or right subclavian artery to the pulmonary artery or by making an anastamosis between the aorta and pulmonary artery. The diagnosis of Tetralogy of Fallot is not too difficult. 75% of patients over three years old with cyanotic congenital heart disease have the Tetralogy of Fallot. In addition to cyanosis, the patients usually have clubbed fingers and polycythemia, and tend to assume a squatting position. The EKG always shows right axis deviation, and by x-ray the heart, while not greatly enlarged, tends to be boot-shaped and the lung fields dark due to lack of blood. It is impossible to predict which patients will be improved by surgery—the majority are vastly improved while a few are not. The mortality of the operation is 10+%.

Pure pulmonary stenosis is another form of congenital cardiac anomaly amenable to surgery. The patients may not be cyanotic and often do well in childhood only to have increasing trouble in later years. The right ventricle is enlarged and the pulmonary artery beyond the obstruction is always enlarged probably due to a lack of elastic tissue. The arm to tongue circulation time is prolonged, a pulmonic systolic murmur is heard, and the EKG shows marked right axis deviation. Angiocardiography to visualize the anomaly and cardiac catheterization are helpful in making the diagnosis. Surgery consists of inserting a special double blade instrument through the right ventricle to cut the obstruction. Too few cases have been done thus far to evaluate the operative mortality. Dramatic improvement may follow surgery.

Vascular anomalies in the superior mediastinum are also amenable to surgery. The double aortic arch is characterized clinically by crowing respiration, repeated respiratory infections, and dysphagia; it is treated surgically by division of the arch. A

concluded on next page

right aortic arch with a ligamentum arteriosum from the pulmonary artery to the aorta can be corrected by division of the ligamentum—the diagnosis being made by the respiratory stridor, intercostal retraction, a tendency to lie on one side with the head back, and by x-ray study following a barium swallow or lipiodol in the trachea.

The surgical treatment of coarctation of the aorta is now well known. 99% of coarctations are high in the thorax. As to the prognosis of coarctation of the aorta, 26% of patients enjoy a long life with only minor symptoms, 23% die from rupture of the aorta usually between 20-30 years of age, 22% die from bacterial infection, 18% die from congestive heart failure, and 11% die from intracranial hemorrhage. Surgical treatment consists of removal of the coarctation with an end to end anastamosis, or if the coarctation is large the use of a graft—the graft being a section of aorta taken postmortem from a person killed accidentally. To date, Dr. Gross has done seventeen grafts and of these two died with renal complications while the rest had an amazing recovery. The diagnosis of coarctation of the aorta can be made by finding blood pressure higher in the arms than in the legs and weak femoral artery pulsations. A precordial systolic murmur with transmission to the back is found in most while a few have no murmurs and another few have a to and fro murmur. Collateral circulation can often be felt over the back and seen on the chest. By x-ray the 3rd to the 9th ribs are often notched but this is rare under age 12, the heart is enlarged and the aortic knob is small or absent. A barium swallow and angiocardiography may be helpful in the occasional questionable case.

160 operations for correction of coarctation of the aorta have been done so far by Dr. Gross. Ten patients died—most of them during the operation or shortly thereafter. Only two have died in the last 60 operations. Only one patient died as long as one year post-op. Three women have delivered children post-op. Two patients had no improvement in blood pressure, six had only partial improvement, while the rest (90%) had a return of blood pressure to normal. Experience has shown that patients with associated mitral valve disease, associated aortic valve insufficiency, or marked EKG changes of damage do not tolerate the procedure well and are probably better off without operation.

IV. EARLY MANIFESTATIONS OF CONGESTIVE HEART FAILURE AND THEIR MANAGEMENT

An Abstract of the lecture given on October 9, 1950, by C. Sidney Burwell, M.D., of Boston, Massachusetts, Research Professor of Clinical Medicine, Harvard Medical School, and Physician, Peter Brent Brigham Hospital, Boston.

There are three phases of heart disease to consider: the period of injury, the period of heart disease with no symptoms, and the period of symptomatic heart disease where there may be either diminished cardiac reserve or outright myocardial failure.

Congestive heart failure may appear when the work required of the heart exceeds its capacity or when the ability of the heart to work is reduced. Some causes of increased work demanded of the heart are valvular heart disease, hypertension, thyrotoxicosis, constrictive pericarditis, and pulmonary vascular disease. Decreased ability of the heart to work may result from myocardial atrophy, coronary artery disease, myocarditis, myocardial fibrosis, and metabolic defects.

Certain added burdens may precipitate heart failure such as unusual muscular exertion, anxiety, fever, tachycardia, anemia, infection, pregnancy, obesity, and cough.

Heart failure produces symptoms and signs by decreased cardiac output so that blood supply can't meet demand and by the congestion of blood in the vascular tree with resultant stasis, anoxemia, and leakage thru capillary walls.

To recognize the transition between heart disease without symptoms and symptomatic heart disease certain factors are helpful. History is very useful as are evidences of valvular disease, hypertension, or coronary artery disease. The failing heart is usually enlarged—the exception being heart failure from coronary artery disease where heart size may be normal. Gallop rhythm and alternation of the pulse are useful early signs of the failing heart. The patient usually has certain symptoms to aid in the diagnosis such as dyspnea or fatigue on exertion, insomnia, and annoying cough.

As the heart failure progresses, dyspnea becomes marked, true orthopnea appears, there is often a sense of exhaustion, weight gain and slight edema appear. Abdominal pain due to congestion of the liver is usually a late symptom but may appear early, especially in right sided heart failure such as with mitral stenosis. Other signs of heart failure besides the early signs of gallop rhythm and alternating pulse are inadequate respiratory excursions.

pulmonary rales, pleural effusion, venous distension, hepatomegaly, ascites, edema, delerium, and Cheyne-Stokes respiration.

Laboratory aids in diagnosing the failing heart are venous pressure, circulation time, vital capacity, and chest x-ray. The EKG is not too helpful.

The main diseases to consider in the differential diagnosis of congestive heart failure are chronic lung disease, renal disease with fluid retention, and psychoneurosis.

Treatment, in brief, should first be directed toward reducing the burden on the heart. Digitalis, oxygen, reduced sodium intake, diuretics, and sedatives are the most effective agents to use in combating the disabling effects of the failing heart.

V. PATHOGENESIS OF ANGINA PECTORIS AND SOME CLINICAL IMPLICATIONS

An Abstract of the lecture given on October 16, 1950, by Herrman L. Blumgart, M.D., of Boston, Massachusetts, Professor of Medicine, Harvard Medical School, and Physician-in-Chief, Beth-Israel Hospital, Boston.

Angina pectoris is caused by insufficient blood supply to the myocardium. Coronary sclerosis may be the underlying abnormality or the quality of the blood may be at fault as in anemia or asphyxia. The blood supply to the myocardium may be enough for basal needs but not for increased demand as with fever or exertion. The blood supply can be increased by nitroglycerine, xanthines, and rest.

The coronary vascular system can be studied by injecting each of the three large coronary arteries with a lead agar mass, and then by x-ray a picture of the coronary tree is obtained. Many hearts from cardiac patients as well as many controls have been studied this way at the Beth Israel Hospital. 30% of individuals over 40 without cardiac symptoms showed some degree of coronary sclerosis. If the narrowing of the coronary arteries is slow, anastamoses develop. Experimental work has shown that if the right coronary artery of the pig is ligated, the animal dies immediately, but if the arterial lumen is instead reduced to 25%, the pig usually lives and after 12 days sufficient anastamoses had developed to maintain life. In the hearts studied by the injection technique all the patients who had had angina during life showed marked arteriosclerotic narrowing and the majority showed occlusions of major coronary arteries. None of the patients whose hearts were normal at autopsy had had angina pectoris. One heart showed nine occlusions, yet the patient, although he had had angina pectoris for 4½ years, had never clinically had a myocardial infarction.

Certain patients develop prolonged severe angina yet never have the typical EKG changes, the fever, leucocytosis and elevated sed. rate to substantiate a diagnosis of myocardial infarction. Perhaps these patients have marked narrowing of the coronary arteries or even occlusion without infarction. Since such a picture may be prodromal to infarction, treatment should consist of 5-7 days bed rest and then 2-3 weeks of restricted activity.

Certain things can be done in treating the patient with angina pectoris. Activity should be restricted since arrhythmias or infarction may occur with overactivity. Patients with angina pectoris should avoid emotional strain which can increase heart work 100%; they should dress warmly in cold weather; they should not eat large meals—six small meals a day are better than three large ones. Smoking is probably injurious to some patients with angina pectoris and not to others; thus it is wise for the patient to refrain from tobacco for three weeks to see if he improves. Alcohol in small amounts seems beneficial. Nitroglycerine is, of course, useful both to relieve the pain and as a prophylaxis against pain. Khellin, a newer drug used in treating severe angina, sometimes produces nausea and so far has not proven to be too useful.

Certain underlying factors may produce or aggravate angina pectoris and many of these are curable. Anemia and thyrotoxicosis may produce "curable angina." Angina caused by syphilitic aortitis may disappear after anti-luetic therapy consisting of bismuth subsalicylate twice a week for three weeks and then 600,000 u. of procaine penicillin G daily for 10 days. Arrhythmias may also produce angina and are usually correctable.

Major surgery in the patient with angina pectoris produces a 3-5% mortality even with the closest supervision. Surgery should be avoided if possible and when absolutely necessary should be made as short as possible. Atropine and narcotics should be used as little as possible while oxygen should be used in high concentration and should be used routinely post-op. Ether is a good anesthetic for these patients; spinal anesthesia should be avoided. IV fluids and saline must be given with care attempting to regulate the output to 1500 cc. daily. Blood should be given before the blood pressure falls. Soon postoperatively, the patient should raise mucus and should not be sedated too heavily. It is wise to give ⅛-¼ grain of morphia two days pre-operatively to observe the effect; if excitement

concluded on next page

is produced, another drug should be used preoperatively. Epinephrine in local anesthetics may cause angina, arrhythmias, or myocardial infarction in these patients. Pituitrin, ergot, and prostigmine are best avoided.

Certain other measures can be used in treating angina pectoris. Nerve fibers from C_8 to T_5 go to the heart and either by cutting these nerves or by alcohol injection certain intractable cases of angina can be relieved. Since nerve resection is quite a procedure, alcohol injection is probably preferable and has been used successfully in numerous patients. Omentopexy is still in the experimental stage. Thyroidectomy has been tried to relieve angina pectoris; by keeping the BMR at —25% postoperatively about 50% of patients have improved; however, the risk of the surgical procedure and the postoperative complications that may develop render this procedure of doubtful value. Propylthiouracil may be used instead of thyroidectomy but the drug must be given for too prolonged a time and the response is too variable. Radioactive iodine has been used in 54 patients at the Beth Israel Hospital with a 1½ year follow-up in 36 of these. Only the severest cases were treated this way, myxedema being produced after 1-2 doses of the radioactive iodine. No toxic effects have been observed. ⅓ of the patients were much improved, ⅓ have died, and ⅓ showed no worthwhile improvement. This form of therapy is still in the experimental stage.

VI. RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE

An Abstract of the lecture given on October 30, 1950, by T. Duckett Jones, M.D., of New York City, Medical Director, The Helen Hay Whitney Foundation, New York.

The diagnosis of acute rheumatic fever is not easy. As an aid to the physician confronted with a possible case of rheumatic fever certain diagnostic criteria have been set forth in the form of major and minor manifestations.

The major manifestations include arthritis, carditis, chorea, subcutaneous nodules (present in 12-15%), and a history of previous rheumatic fever. Skin lesions in the form of erythema marginatum may be classified as a major manifestation; they are present in 12-15% of cases and the great majority of these also have subcutaneous nodules. The diagnosis of carditis does not include EKG changes but is made by an increase in heart size, the appearance of murmurs, pericarditis, or evidence of heart failure. Two murmurs are especially characteristic; these are a high-pitched apical systolic murmur usually heard all through systole and uninfluenced by position or respiration and usually heard also over the left lower lung field posteriorly or the early blowing diastolic murmur along the left sternal border—the murmur of aortic insufficiency. As regards heart failure, the right side of the heart often fails in the young patient long before the left side—indeed, the left side may never fail. Chorea, if it appears alone at first, is followed later by other evidence of rheumatic fever in 75% of patients.

Minor manifestations include low grade fever, which is unimportant in the diagnosis unless other things are also present; bleeding tendencies, especially epistaxis; precordial and abdominal pain; pallor; sweating; vomiting, etc.

Laboratory studies are very non-specific as aids in the diagnosis of rheumatic fever. EKG changes are not especially helpful and are very non-specific, the sed. rate is of some value in following patients but 50% of patients who develop heart failure have a return of the sed. rate to normal due to the heart failure. A microcytic anemia is very common but likewise non-specific. A rise in the antistreptolysin titre may be of some help but indicates only a preceding strep infection.

In the past, it has been felt that the presence of two major manifestations makes the diagnosis of rheumatic fever certain while the presence of one major and two minor manifestations makes the diagnosis sound but not certain. Recently, a group studying the effect of cortisone on rheumatic fever has eliminated this second category and has added a positive throat culture for hemolytic strep and a rising antistreptolysin titre to the list of minor manifestations. To accept a history of rheumatic fever in the past, the patient must now have evidence of rheumatic heart disease or the criteria used in the past to establish the diagnosis must satisfy current criteria.

1,000 patients have been followed in Boston for an average of 20 years. The average age of the patients at the onset of rheumatic fever was 8; the average age now is 28. After 10 years, 202 of these patients were dead, ⅔ had developed rheumatic heart disease, while ⅓ had not developed any detectable heart disease. After 20 years, 301 of these 1,000 patients were dead—80% dying of rheumatic fever or heart failure. 40% of the patients who showed evidence of rheumatic heart disease with the initial attack of rheumatic fever were dead after 20 years. As regards recurrences of rheumatic fever and of chorea in this group; 19% had recurrences within 5 years after the first attack.

concluded on page 38

PATHOLOGY OF IONIZING RADIATION*

LT. COMDR. RUSSELL M. MAYNARD, MC, USN

The Author. *Lt. Comdr. Russell M. Maynard, MC, USN, Pathologist, Newport Naval Hospital, Newport, Rhode Island.*

THE EXPLOSION of an atomic bomb produces three types of injury — mechanical, thermal, and ionizing radiation. In the previous explosions the mechanical and thermal types have been the most important in the production of casualties. The mechanical injuries either are a direct result of the blast, or secondary to other factors, such as flying glass and falling bricks and timbers.

The burns among Japanese survivors were largely of the "flash" type resulting from extreme heat for a fraction of a second[1]. This was so instantaneous that shadows of intervening objects were sharply profiled on the skin. Infection was prominent in burn cases largely because of the accompanying leukopenia and lowered resistance of the host subsequent to the ionizing radiation.

The effects of ionizing radiation are similar to those of total body x-radiation in animals and men. The extent of tissue damage is proportionate to the amount of exposure and the resistance of the individual. The amount of exposure depends on distance from the explosion and the degree of shielding the individual may have.

Following significant exposure, nausea, vomiting, malaise, and diarrhea develop within a few hours. Shortly thereafter, with the advent of leukopenia, petechiae develop over the skin and mucous membranes. Diarrhea becomes more severe and sanguinous, and death may occur within a few days.

In those individuals receiving a less severe dose, following the initial symptoms, a relatively asymptomatic latent period is seen. The duration of this is roughly inversely proportional to the extent of exposure. In Japan it averaged 2-4 weeks. During the latent period leukopenia and thrombopenia develop progressively and reticulocytes disappear from the blood stream.

*Presented at the Midwinter Meeting of the Rhode Island Medical Society, at Woonsocket, R. I., December 13, 1950. The opinions expressed are those of the author, and they do not necessarily reflect the views of the Navy Department.

Following the latent period the original symptoms return with intractable bloody diarrhea, purpura, and fever. With the pancytopenia, an individual's resistance to infection is lowered and infections of the mucous membranes and skin may occur. In addition to the skin hemorrhages, epistaxis, melena, hematuria, and menorrhagia may be seen. Patchy epilation of the hair also occurs. Anemia uniformly develops.

The pathogenesis of radiation sickness depends on the resistance of individual cells. Various investigators have found the cells to be resistant to ionizing radiation in roughly the following order:

1. Lymphocytes — most sensitive.
2. Erythroblasts.
3. Germinal epithelium of testes.
4. Myeloblasts.
5. Gastro-intestinal epithelium.
6. Germinal cells of ovaries.
7. Endothelium.
8. Skin and appendages.

More resistant are the connective tissue, bones, liver, pancreas, kidneys, nerve tissue, and muscles.

Generally speaking, the younger cells are more sensitive to radiation, while the more mature cells are less markedly disturbed. This factor explains for us the latent period or time during which symptoms are absent. This period is the length of time prior to the natural death of the more mature cells. Because the younger cells have been damaged, they fail to replace the older as their life duration is reached, and the fatal course becomes manifest.

The most striking changes observed on gross autopsy examination of the organs of patients and experimental animals are the hemorrhagic phenomena[2]. These are a result of several factors. There is increased capillary fragility and platelet deficiency, together with the presence of a heparin-like substance in the blood stream. All the Bikini experimental animals studied by Cronkite that developed a prolonged clotting time died[3].

The hemorrhages occur as petechiae over the skin and viscera or as larger extravasations of blood into tissue spaces and body cavities. Surface mucosal ulcerations and hemorrhages account for sanguinous diarrhea, melena, and hematemesis. Hematuria results from hemorrhage into the renal pelves.

concluded on next page

Next to the hemorrhagic phenomena, the most striking finding on gross examination of the organs is necrosis with ulcerations of the mucosal epithelium. According to Tullis[4], these were more striking in the Bikini animals than in those dying from total body x-radiation. The ulcerations are characterized by lack of accompanying purulent reaction. Secondary infections are frequently observed and in these cases also, as a result of the leukopenia, the purulent reaction is decreased. Fairly frequently a lobular hemorrhagic pneumonia has been observed.

Histological examination of the tissues of human and animal victims of extensive ionizing radiation reveals the most marked changes to involve the reticulo-endothelial system. Lymph nodes show an extensive depletion of cells, particularly of the small lymphocytes. The cells remaining appear fairly normal, and reticular cells are relatively frequent. Hemorrhages may involve the nodes extensively.

Lymphoid tissue elsewhere in the body undergoes changes similar to that observed in lymph nodes. In the spleen the lymphoid tissue of the Malpighian bodies is greatly decreased in amount because of necrosis of the cells. The sinusoids are usually greatly dilated and congested. After a few days an increased amount of blood pigment is deposited because of destruction of the red cells.

The lymphoid tissue of the thymus is likewise greatly decreased in amount, and hemorrhagic phenomena are often observed.

The bone marrow changes following massive instantaneous radiation are extensive. A marked hypoplasia of myeloid tissue develops within the first week. With this, a compensatory proliferation of the reticulum of the long bones frequently results. Because of regenerative ability, focal areas of hyperplasia later develop in the hypoplastic marrow. Although early, there is no apparent relation between the bone marrow picture and the blood picture, after a few weeks leukocytosis usually returns along with the focal myeloid hyperplasia.

Liebow, Warren, and DeCoursey[1], in their study of tissue from the Japanese casualties, classified bone marrow findings into four groups according to degree and type of regeneration:

Type A — This included those marrows showing marked hypoplasia. Many such cases presented an almost totally aplastic appearance.

Type B — This group of marrows showed extensive hypoplasia with focal areas of hyperplasia of the reticulum. Occasionally small islands of erythropoesis and granulopoesis were found.

Type C — In this group frequent definite foci of myeloid regeneration were noted. Some maturation was noted and megakaryocytes became increased in number.

Type D — This group revealed rather extreme hyperplasia of the myeloid system.

In the regeneration process there was frequently increase of reticulum and lymphoid tissue at the expense of the myeloid tissue.

Some of the earliest pathological findings observed following radiation are in the blood where there is prompt disappearance of lymphocytes within the first 72 hours. If the dose is non-lethal, recovery begins a few days later. After the first day there is progressive decrease of granulocytes. In non-lethal cases gradual return of the leukocytes to normal commences after about two weeks, while in the fatal cases suppression of the white count continues, with extensive hypoplasia of the bone marrow. The erythrocyte count drops with development of anemia. Thrombocytopenia likewise becomes evident.

In addition to the hemorrhages with depletion and necrosis of the lymphoid tissue of the gastro-intestinal tract, epithelial ulceration and necrosis is frequent. In the individuals dying soon after exposure, this is usually not accompanied by an inflammatory reaction, because of the concomitant neutropenia and lymphopenia. Bacterial infections at times set in without the usual inflammatory cell response. Mucosal ulcerations have been found to be more frequent and more severe in the lower gastro-intestinal tract than in the upper, with the esophagus least involved. The mucosa of the oral cavity may show similar (but less severe) ulcerative changes to those observed in the intestine.

Vessels beneath the ulcerations may at times become thrombosed, while in other cases they are instead dilated and engorged with blood. The lymphoid tissue of the lamina propria and submucosa is greatly reduced in amount, and the Peyer's patches are greatly decreased in size. Occasionally hemorrhages occur in the muscular layer, but this part is otherwise unremarkable. In the glandular epithelium not actually involved by the ulceration process, there is sometimes distortion of size, shape, and staining characteristics of the epithelial cells.

The lungs frequently show congestion of alveolar septa with distention of alveoli by edema fluid. This is sometimes clear but usually some fibrin and cells are included. Focal necroses and hemorrhages may at times be observed. These necroses are significant in that they are only rarely accompanied by a cellular reaction. This is the so-called "neutropenic pneumonia" described by several investi-

gators. The absence of inflammatory cells from the blood stream results in their failure to appear at the sites of necrosis. At times there is desquamation of some of the bronchial epithelium.

In heavily irradiated animals hematuria is frequently observed. This is subsequent to interstitial renal hemorrhage and epithelial desquamation. Other than this, very few changes are observed on histological examination of the kidneys.

Damage to skin following heavy instantaneous exposure to total body irradiation is relatively slight compared with the extensive damage observed following repeated prolonged exposures, such as is seen with x-ray burns. Vacuolation of cells, especially of the basal layer, has been seen. There is, at times, clumping of chromatin. The corium may show some hyalinization of collagen. There are often degenerative changes in the epithelium of hair follicles resulting in the loss of hair. The sebaceous and sweat glands are not involved. The endothelial damage and capillary fragility result in the petechiae and ecchymoses so frequently observed grossly. These are the pronounced and most often seen changes in the skin following sudden heavy exposure to ionizing radiation.

Histological examination of the testes, as a rule, reveals a rather marked atrophy. In the cases dying early, there is often extensive sloughing of the germinal epithelium and many of the remaining cells may have pyknotic nuclei. Even in those which have undergone extensive atrophy, occasional remaining spermatogonia may be seen.

Study of the ovaries reveals usually less severe changes than observed in the testes. There may be a decrease in number of follicles with injury to the germinal epithelium of those remaining.

Studies of the brain have revealed moderate congestion of vessels as well as small and large hemorrhages in some instances. Histologic examination has shown practically no changes in the glial or the ganglion cells.

Examination of the adrenals has revealed decrease in cortical lipoid even in those cases dying early. There is noted considerable atrophy of the cells in the outer cortical zone.

Studies of the liver in those patients dying early have revealed few changes. In those who live for a considerable period of time, however, fatty metamorphosis is frequently observed. This is usually attributed to accompanying malnutrition.

One important finding from the studies of the Japanese casualties and experimental animals is that there are certain radio-resistant elements in the more radiosensitive organs[4]. These are the most primitive, or stem cells, which remain after injury even though the more mature cells are destroyed. This is an important exception to the rule that the more immature the cell, the more sensitive it is to radiation. These resistant cells are the primitive reticulo-endothelial cells of reticular tissue, the indifferent cells of the immature testes, and the primordial ova.

As the primitive reticulo-endothelial cells recover from injury and multiply, leukocytosis returns, followed later by return of thrombocytes, red cells, and lymphocytes. More extensive irreparable damage results in failure of recovery and permanent hypoplasia of bone marrow and lymphoid tissue with death of the individual.

Studies as to the effect of ionizing radiation on the fetus and germ plasm are incomplete. Although extensive injuries to the fetus occur in those receiving heavy doses, the death of the fetus is the usual result. Non-sterilizing radiation has not been found to produce a particular high incidence of viable abnormal infants. The actual number of gene mutations, however, is not known and as the life cycle of man is so long our information must be received from animal studies.

Some neoplasms are felt to be predisposed by irradiation. This is particularly true of the leukemias.

BIBLIOGRAPHY

[1] Liebow, Warren, & DeCoursey, Pathology of Atomic Bomb Casualties, Am. J. Path. 25:853-1027, 1949.

[2] Tullis & Warren, Gross Autopsy Observations in the Animals Exposed at Bikini, J. A. M. A. 134:1155-1158, 1947.

[3] Cronkite, The Hemorrhagic Syndrome of Acute Ionizing Radiation Illness Produced in Goats and Swine by Exposure to the Atomic Bomb at Bikini, 1946, Blood 5:32-45, 1950.

[4] Tullis, The Response of Tissue to total Body Irradiation, Am. J. Path. 25:829-852, 1949.

[5] Tullis, Radioresistant Cells in Certain Radiosensitive Tissues of Swine Exposed to Atomic Radiation, Arch. Path. 48: 171-177, 1949.

Our 3 registered pharmacists

Serving . . .

PROVIDENCE—CRANSTON

. . . Friendly Pharmacy

22 Pontiac St. Corner Reservoir Ave.

Near Calart Flower Co.

Finest Prescription Service

MALIGNANT LYMPHOMA OF THE GASTRO-INTESTINAL TRACT

ANTHONY V. MIGLIACCIO, M.D. AND VAHEY M. PAHIGIAN, M.D.

The Authors. *Anthony V. Migliaccio, M.D., Associate Surgeon; Vahey M. Pahigian, M.D., Surgical Resident, Rhode Island Hospital.*

Introduction

THE APPARENT INCREASE in the incidence of malignant lymphoma seen in our hospital has stirred our interest in the surgical aspects of those cases which show involvement of the gastro-intestinal tract. The introduction of nitrogen mustard to the therapeutic armamentarium was another factor which made us feel that an analytical study of the various factors was in order.

A study of the autopsy and surgical pathology records of the Rhode Island Hospital during the 20 year period of 1929 to 1948, inclusive, yielded a total of 36 cases in which the disease process was found in the gastro-intestinal tract. The rarity of gastro-intestinal involvement by malignant lymphoma is emphasized by a comparison with other gastro-intestinal malignancies. During the 20 year period under study, 1490 cases of adeno-carcinoma of the gastro-intestinal tract were tabulated.

Historical

An historical review of this disease emphasized the need for clarification of the varied nomenclature. Morgagni,[28] in 1751,[31] first described "lymphosarcoma" of the stomach. The basic work on the clinical features and pathology of this disorder, however, was not published until 1895, when Kundrat presented it as a disease entity to be distinguished from the aleukemic lymphoma or pseudoleukemia.[28] Surgical approach to therapy was first attempted in 1887 by Virchow.

Classification

The terms, sarcoma, lymphoblastoma, lymphocytoma, malignant lymphoma, etc., have been used by their proponents often in speaking of a single condition. While the various advocates have sound reasons for their particular terminology, they only further the confusion of the clinician by this multiplicity of synonyms. It is to be hoped that a standard nomenclature will be adopted. The Rhode Island Institute of Pathology has adopted Gall and Mallory's classification since its introduction, with modification by Clarke.

Classification of Malignant Lymphoma

1. Lymphocytic type.
2. Lymphoblastic type.
3. Reticulum cell type.
4. Follicular type.
5. Hodgkin's disease.

The etiological controversy is beyond the scope of this paper. We are of the opinion that it is neoplastic in nature and should be treated as such. The role of subacute or chronic infection is a matter of pure speculation.

Pathology

Of all the many generic terms utilized to designate disorders of the lymphatic system characterized clinically by progressive tumor-like enlargement with eventual fatality, and histologically by multiplication of one or more of normal lymphnode elements, "malignant lymphoma" appears to have been accepted for most general usage in this country.[2] In all its varieties, this appears to be a generalized disease, or to become such so rapidly, that it is the exceptional case which is observed in the localized stage. However, a discrete lesion found incidentally at post-mortem examination, or one removed surgically and followed by survival for years, is often without evidence of generalized distribution. Sugarbacker and Craver[34] have explained this by claiming "lymphosarcoma" to be of either monocentric or multicentric origin. Thus, primary localized intestinal lesions may be classified as members of the former group, while multicentric origin explains the appearance of multiple areas involved simultaneously. These may spread by lymphatics and show true metastatic growths in other organs. Others, particularly Schoeder and Schattenberg,[31] claim the pathology to be, not of a primary disease in an organ, but rather a systemic disease of which localized organ involvement is purely a manifestation.

It is generally agreed that the lesion begins in a nidus of lymphoid tissue of the gastro-intestinal tract, such as a follicle in the submucosa and then spreads characteristically by obliterating the wall of the bowel.[20] Moreton[22] quotes A. U. Desjardins in a personal communication as stating, "Although this condition may arise primarily in the gastro-intestinal tract, many of the cases of so-called

primary lymphosarcoma of the gastro-intestinal tract actually start in the retroperitoneal nodes and extend into the gastro-intestinal tract, at which point they present their primary symptoms."

Following its origin within the submucosa, the lesion gradually invades and destroys the muscular coats to appear as a subserous tumor. Lymphomatous lesions have a scanty and delicate reticulum, so that there is little tendency for them to contract, and to restrict, the visceral lumen. Thus, obstruction is not a predominant characteristic. Ulceration, a feature so characteristic of carcinoma, occurs late, only when the diffuse infiltration of the lesions extends enough to compromise the blood supply. This extreme involvement of the bowel wall accounts for the not uncommon complication of perforation. McNeely and Hedin[17] have emphasized this tendency for perforation by recommending that a biopsy be taken of the wall in any case of a perforated stomach. The frequency of proximal dilatation of the intestinal lumen has been explained on the basis of early involvement of the submucosa with resultant paralysis of its plexus of nerves.

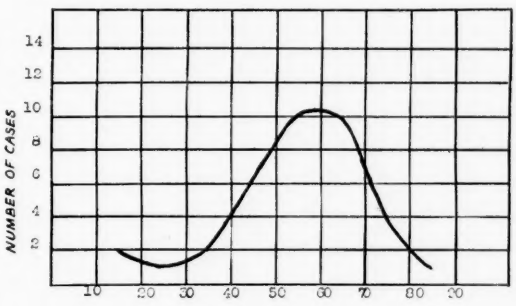
The gross pathology may assume several forms. Copeland and Greiner classify them as (1) Polypoid lesion, (2) Infiltrating annular lesion, with thickening, but little evidence of constriction, (3) Stenosing annular lesion and (4) Aneurysmal dilatation at the site of tumor or above it.

The spread of the lesion is characteristically that of a true neoplastic process for it may be lymphatic, hematogenous or by direct extension.[7] Lymphatic drainage involves the mesenteric nodes, then the retroperitoneal and aortic nodes.[37] There is actual evidence of blood invasion, and many authors have demonstrated the presence of true metastases in distant organs. Jackson[14] mentions that, actually, metastasis is more widespread and occurs earlier than in carcinoma. This is supposedly due to the smallness of the cells of lymphoid tissue, and its amoebic properties which facilitate invasion into lymphatic spaces. Regional metastasis may be so widespread as to overshadow the primary lesion.

A discussion of the probable sites of malignant lymphoma formation naturally reverts to the location of lymphoid tissue within the gastro-intestinal tract. The predilection for "lympho-sarcoma" of the small bowel is just proximal to the ileocecal valve, where anatomically the lymphoid tissue of the mucosa is most abundant. In comparison with the stomach and colon, the small intestine is relatively free from malignancy, yet malignant lymphoma is found as frequently as any other form of malignancy in the ileum. We can generalize by stating that the most common site in the small intestine is the ileum, in the large intestine, the rectum. It is interesting to note that Libman found the duodenum to be as common a site as the ileum.[7] This observation is not borne out by other papers. Gray and Lofgren[13] and others have pointed out that malignant lymphoma is more apt to cause intussesception than carcinoma because of its segmental distribution and its lack of interference with muscular activity of the intestine. The comparison of predilection of stomach to small and large intestine, as the site of such lesions, or the comparative percentage of gastro-intestinal lesions found in generalized malignant lymphoma (leukemia or lymph-adenopathy) was not found in our review of all available literature.

Analysis of Cases

Twenty-one (59%) of our cases were found in the male, and 15 (41%) in the female. The predominance in the male is a constant finding in literature, varying only in degree.



The average age in our series was 55 years. Twenty-six cases (72%) were diagnosed between the ages of 40 and 70. Age relationship to localization shows that in the 15 cases of gastric involvement, the average age was 56. Similarly, in both the small and large intestine, the average age was 53 and 58 respectively. It is thus apparent that this process is one of middle and late middle age.

concluded on next page

IN OLNEYVILLE IT'S . . .

McCAFFREY INC.

Druggists

19 OLNEYVILLE SQUARE

PROVIDENCE 9, R. I.

MAY 9 — 10

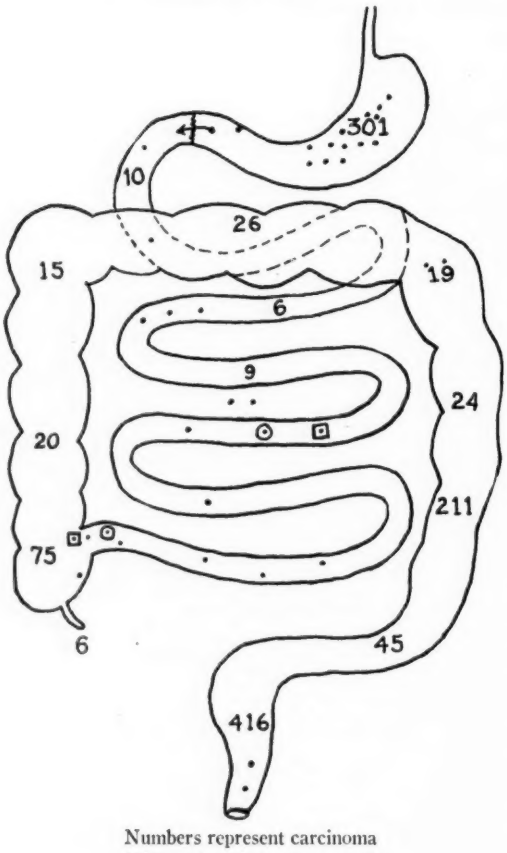
140th Annual Meeting at Providence

Chart #2 graphically portrays the known fact, that, while carcinoma is more common in the stomach and the large bowel, malignant lymphoma is relatively more common in the small bowel.

Of the 36 cases presented in this paper, 15 were found to have lesions involving the stomach. One case showed involvement of the pyloric end of the stomach, with extension into the first portion of the duodenum. A still further interesting observation was the presence of multiple lesions noted in two of the cases in this series. In each instance, one lesion was found to be in the mid-portion of the ileum, with its accompanying lesion localized in the terminal ileum. Conversion of the localization chart, #2, into percentages shows the stomach to have been the site of the lesion in 41% of our cases,

CHART II.

Location of Carcinoma and Malignant Lymphoma in Rhode Island Hospital Series.



Numbers represent carcinoma
(182 unclassified colon cases)

Each dot represents a case of malignant lymphoma

○ } represent multiple lesions
□ } of malignant lymphoma

as compared to 22% involvement by carcinoma. This comparison is continued in Table I, which follows.

SITE	PERCENTAGE	
	Malignant Lymphoma	*Carcinoma*
Stomach	41.6%	22.0%
Duodenum	5.5%	0.7%
Jejunum	8.3%	0.4%
Ileum	25.0%	0.6%
Appendix	0.0%	0.4%
Ascending colon (including hepatic flexure)	2.8%	8.0%
Transverse colon	0.0%	2.0%
Descending colon (including splenic flexure)	5.5%	3.1%
Sigmoid	0.0%	15.3%
"Rectosigmoid"	0.0%	3.3%
Rectum	5.5%	30.5%
Mesentery	5.5%	0.0%
Unclassified	.....	13.3%

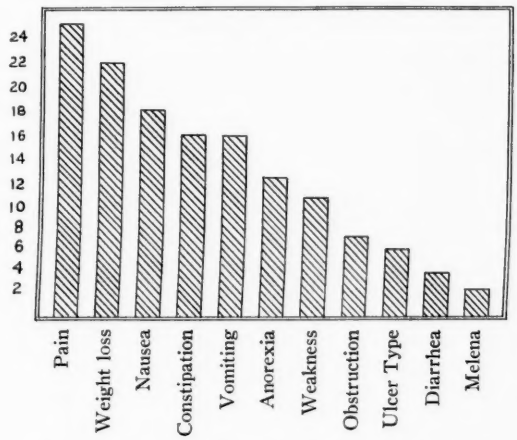
Symptomatology

The apparent rarity of a preoperative diagnosis of malignant lymphoma of the gastro-intestinal tract has stimulated many to search the symptomatology presented by such patients, in an attempt to find some means of making an accurate diagnosis. Several patterns of symptoms have been advanced in the literature to aid in the detection of this malignant process. Moreton,[22] O'Donaghue and Jacobs, and others, have emphasized the prevalence of upper abdominal or epigastric pain as the primary complaint in malignant lymphoma of the stomach. This is claimed to be due to the proximity of the malignant lymphoma to the submucous plexus of nerves. Beyond this initial agreement there is sharp dissention, for some authors claim the presence of a pain—food—ease pattern, while others state that the pain is characteristically not relieved by the ingestion of food. It is generally agreed that obstruction is uncommon in gastric lesions. The amount of weight loss is negligible as compared to that found in gastric carcinoma. Pack and McNeer[25] mention the occasional appearance of Kundratt's sign—swelling of the lymphoid follicles at the base of the tongue.

The predominating symptoms in our series are graphically illustrated on the accompanying chart.

CHART III.

Signs and Symptoms



Pain was the most common symptom, being present in 66% of the cases. Weight loss was a close second. The characteristics of the pain varied with the location of the lesion. Only 45% of the gastric cases had pain, while 80% of the bowel cases presented pain as part of their symptom complex. Localization of the pain held our interest, for invariably, the gastric cases, when pain was present, localized it to the epigastrium. The back was the site of this symptom in two bowel cases—one with retroperitoneal invasion; the other, a rectal lesion. Six (20%) of the bowel cases presented generalized abdominal pain; otherwise, lesions of the proximal small bowel, referred pain to the left upper quadrant, while distal small bowel lesions localized their pain to the right lower quadrant. Of our fifteen gastric cases, five had the ulcer type of pain. This was in contrast to the crampy, colicky complaint, varying in intensity found in the lesions of the small bowel.

Sixty percent of the patients noticed a loss in weight over a variable period of time. This was never as marked as in cases presenting carcinoma in similar locations. Nausea was seen in 48% of the series, vomiting in 42%. Lesions of the small and large bowel presented these two symptoms in 65% of our cases, as contrasted to 25% of the patients with gastric involvement. Obstruction was present in only 20% of our cases, none of which was gastric in origin. Thus, obstructive signs were found in 42% of our non-gastric cases. This latter figure falls slightly below Carson's 50-60%. Two of our cases had melena. Hemetemesis appeared in one patient.

Physical Signs

A mass was palpable abdominally in 15% of our gastric, 36% of our small bowel, and 40% of the large bowel cases, exclusive of the rectum. Tenderness was found in 75% of the palpable masses. In only one of our two rectal lesions could mass be felt by digital examination. Schroeder and Schattenberg[31] found a palpable mass in 30-40% of their gastric series, while in the Spencer, Collins and Renshaw series,[33] it was 25%. Small bowel lesions, apparently more frequently possess palpable masses. Gray and Lofgren[13] were able to palpate a tumor in 75% of eight new cases of small bowel involvement as reported from the Mayo Clinic. Splenomegaly, reported to be 10% in Pack and McNeer's series of gastric lympho-sarcoma, was present in only one of our cases. This was a patient with a gastric lesion, who had been previously diagnosed as having agnogenic myeloid metaplasia. Palpable glands were noted in 28% of the cases. Biopsy of these glands, when performed, was infrequently positive.

Laboratory

Blood studies as a rule added little of any value in arriving at a diagnosis, unless a frank leukemia was present. This was true in one patient of our study group. Moreton[22] and others have mentioned this lack of mirroring in the peripheral blood stream. Hypochromic microcytic anemia, and a low serum protein level are the rule. Unfortunately, gastric acidity studies have been performed on only three of our cases, two of which showed low fasting hydrochloric acid, and one, achlorhydria. O'Donahue and Jacobs[23] found a normal value in only 20%, and low or absent hydrochloric acid in the other 80% of their gastric series. Madding and Walters[14] report achlorhydria in 67% of the reticulum cell lymphomas of the stomach.

X-Ray Diagnosis

In our gastric series, an x-ray study was carried out in only ten of our fifteen cases. The diagnosis of carcinoma was made in four or 40%, carcinoma or lymphoma in three or 30%, gastric ulcer in one, benign tumor in one, and in one case the report was negative. Johnson[15] states that the diagnosis of lymphoma should be suspected when it is noted that the gastric rugae are decidedly enlarged, suggesting marked submucosal infiltration resembling an advanced hypertrophic gastritis. He maintains that roentgen studies continue to be our greatest diagnostic aid.

No case of small or large bowel malignant lymphoma was correctly diagnosed by the roentgenologist. The studies showed either an entirely normal pattern or one suggesting carcinoma. Menne, Mason, and Johnston,[2] however, feel that residuum in loops of ileum, rigidity of the ileocecal valve, filling defect of the cecum and distention or partial obstruction of the small bowel should make one suspicious. Gastroscopy was performed in one case, and the gastroscopist reported a lesion sus-

continued on page 34

The RHODE ISLAND MEDICAL JOURNAL

Owned and Published Monthly by the Rhode Island Medical Society,
106 Francis Street, Providence, Rhode Island

EDITORIAL BOARD

PETER PINEO CHASE, M.D., *Editor-in-Chief,* 122 Waterman Street, Providence
JOHN E. FARRELL, *Managing Editor,* 106 Francis Street, Providence

CHARLES J. ASHWORTH, M.D.*
ALEX M. BURGESS, M.D.
JOHN E. DONLEY, M.D.*
IRVING A. BECK, M.D.*
CHARLES L. FARRELL, M.D.*
MARSHALL FULTON, M.D.
ISAAC GERBER, M.D.
PETER F. HARRINGTON, M.D.
ERNEST K. LANDSTEINER, M.D.
CLIFTON B. LEECH, M.D.*
HENRY E. UTTER, M.D.*
DAVID G. WRIGHT, M.D.

COMMITTEE ON PUBLICATION

(*Members in addition to those marked above with asterisk**)

JOHN A. DILLON, M.D., *of Providence*
HAROLD G. CALDER, M.D., *of Providence*
PETER C. ERINAKES, M.D., *of West Warwick*
FRANCIS VOSE, M.D., *of Woonsocket*

MIDWINTER MEETING

For the first time in the memory of most of us the Rhode Island Medical Society met in clinical session for its midwinter meeting in the city of Woonsocket where close to two hundred physicians, their wives and guests enjoyed an outstanding program.

Certainly the meeting was most successful in every way. The afternoon program with its lectures on the devastating force of atomic energy when misdirected for warfare certainly brought again to our minds with startling clarity the great problems ahead of all of us for the second half of this century.

The evening program, after a delightful dinner, presented some forthright comment on the increasing necessity for better understanding between hospitals and physicians regarding the practice of medicine, with Dr. Elmer Hess of Erie, Pennsylvania, outlining the position that the American medical profession should take in the matter.

The committee on arrangements is to be complimented for its work. Under their direction we anticipate as equally fine a program for the annual meeting scheduled for Providence next May.

MOBLIZATION QUESTIONNAIRES

Within the month members of the Society have received special questionnaires which seek pertinent information to assist both the committee on emergency medical service and the advisory committee to the Selective Service system.

We admit that questionnaires can prove annoying, entailing as they do the listing of specific data that too often does not seem pertinent or important to the one requested to furnish the information. But these two inquiries to the physicians of Rhode Island are of vital importance to everyone. It is the duty of every member of the Society to cooperate fully in making immediate replies.

The problem of community disaster planning is ever with us, and the first alarm sounds the call for medical aid. In recent months we have read of the train and air and fire disasters in other localities. We must be prepared should such misfortunes ever visit Rhode Island or any of its communities. And in the background, and it is wishful thinking to believe it to be far in the background, is the threat of war disaster. The State Society, as well as the district groups, are concerned with plans for the mobilization of medical personnel for civilian defense.

A plan for the utilization of hospital facilities to cope with a disaster has been submitted to each hospital in the State. It is the hope of the medical society that all physicians who can be available in an emergency will be listed for assignment with either a hospital unit, a Red Cross team, or a local medical society group which would allocate personnel as needed. Clear thinking and clear planning now will result in efficient and effective teamwork when disaster strikes.

The second form directed to physicians particularly concerns those who have not reached their 51st year of age. Under the national selective

service law state advisory committees have been established to assist in the task of deciding what physicians may be spared for duty with the armed forces. The task is neither easy nor pleasant for those who have accepted service with this committee.

But the work will be done, and done fairly and with justice to every physician. The compilation of data through the questionnaire will give a clearer picture of the medical roster of the State that may be subjected to war service should war develop on a far greater scale than the Korean conflict. Under the law Selective Service can draft any eligible person. The advisory medical committee can only recommend deferment. The compilation of adequate and authentic personal data on every physician will therefore be of significant importance to the individual physician.

FLUORIDATION OF WATER SUPPLIES

Statement of the Council of the R. I. Medical Society

WITH THE DISCOVERY of the existence of Fluoride Ions in drinking water, it was soon recognized that excessive concentration of this ion was the cause of Fluorsis or excessively mottled tooth enamel.

Investigation established that 1.5 ppm (parts per million) fluorine was the maximum concentration which did not produce Fluorsis. In 1938 studies by Dean[1] disclosed the existence of an inverse ratio between dental caries (tooth decay) in children and the fluorine content of the water supply.[8]

This evidence of the relation between dental caries and the fluorine content of water supply has been largely based upon the study of children.

At least eight years is required to evaluate properly the full effect of fluoridated water on dental caries or until children have used fluoridated water throughout the period of tooth enamel formation (except for third molars). Several studies of this nature are now in progress and are planned on an eight to ten year basis.

The first community to inaugurate fluoride treatment of its water supply was Grand Rapids, Michigan in January, 1945. Many communities have subsequently followed suit. The studies of the cities of Newburgh and Kingston, New York, should prove to be most interesting and informative. The plan started in June, 1944 with basic dental examinations and repeated examinations are performed yearly. The Newburgh water supply was treated with sodium fluoride to bring its fluorine content up to 1.0 — 1.2 ppm. while Kingston's water supply remains fluorine free. It is expected that ten to twelve years will be required to determine the results of the study. Both cities are about thirty miles apart on the Hudson River and each has an average population of 30,000. The climate and water supply are similar except for the addition of fluorine to the Newburgh water supply.

At the end of three years, the report by Ast-Finn & McCaffrey[2] concluded that DMF (decayed, missing or filled) rate for permanent teeth showed a downward trend in Newburgh from 21.0 to 14.8 per hundred permanent teeth; while the rate in Kingston was 21.3 per hundred or a saving of 6.5 permanent teeth in Newburgh. The greatest benefits were noted in the younger age group.

Hill, Blayney & Wolf report on the Evanston Dental Caries study that examinations in the post fluorine period show an increase in caries rate for deciduous teeth in the 6 to 8 year old group.

Children examined in 1948 showed an overall lowering in the DMF rate for all permanent teeth as well as a reduction of caries of the occulsal surface of the first permanent molar.

Data available indicate a marked reduction of caries in permanent teeth of the 6-7 and 8 year old school children. Comparison of the caries rate in deciduous teeth for the same children does not disclose any trend. They assume that sodium fluoride may have greater effect on the permanent teeth of the children than deciduous teeth. The findings are far from conclusive.

Francis A. Bull[4] of Madison, Wisconsin, reports that 1.0 ppm protects the permanent teeth but is not sufficient to protect deciduous teeth. It is not the fluoride salt that is absorbed into the tooth structure. It is the fluoride ion and the source of this ion may be any soluble fluoride substance such as calcium—sodium—magnesium—sodium silicohydrofluorosilic acid. These fluorides may be added to water supplies in various ways. The method depends upon the engineering problem involved.

Boyd and Cheyne[5] in the *Journal of Pediatrics* reviewed the fluorine ingestion related to tooth decay in Iowa. Their study lends support to the thesis that the incidence in dental caries lessens in the areas of endemic fluorsis but they found caries of some degree in almost every subject. Many children with mottled enamel and prolonged fluoride ingestion showed a high incidence in caries.

They also concluded there was no evidence to indicate that the current consumption of water containing submottling amounts of fluorine has lessened caries in children whose enamel was free from mottling.

concluded on next page

Their studies were made in 1946 and they felt at that time that the constancy of therapeutic value remained to be demonstrated. They felt that the fluoridation was a pharmacologic rather than a physiologic method of caries control.

Summary and Conclusion: The addition of fluorides to water supplies having less than 1-0 ppm has apparently reduced the incidence of dental caries in children in the period of tooth development but this reduction may be due to other things than a fluoride content of the drinking water. The rate of caries in all teeth varies from year to year due to chance—types of prophylactic used—food habits—tooth powders—mouth hygiene etc.

Hill, Blayney & Wolf[4] in the August, 1950 issue of the *Journal of Dental Research* commenting on a study undertaken in Evanston, Illinois state categorically, "We feel that where the data indicates some trend, they are far from conclusive. It cannot be assumed at this early time and cannot be attributed to chance that the changes that have taken place are necessarily due to the addition of sodium fluoride."

The American Water Works Association[6] in 1949 gave *official acceptance to the practice* of water fluoridation for the purpose of reducing tooth decay "where strong public demand has developed and the procedure has the full approval of the local medical and dental society as well as those responsible for communal health."[9]

The American Water Works Association also states that *further experimental studies* are necessary to determine the effect of climate and geographical location as factors in water fluoridation. A constant and uniform fluoride content of one ppm may be inadequate where water consumption is low and excessive where water consumption is high.

New Mexico had fluorsis with as little as 0.7 ppm. American Water Works also points out several technical difficulties in obtaining accurate measurements of fluoride content.

It would seem, therefore, that until more exact and specific data is available or at least until the Newburgh-Kingston studies have been reported, the fluoridation of the local water supply could well be deferred for the present.

In making this recommendation we are well aware that there are many who will claim that such a course will allow a generation of children to develop a high rate of tooth decay and that no further preventive treatment can be applied to them later. Nevertheless the medical profession makes progress slowly but more certainly when it predicates its stand on a sufficient number of controlled studies so that the final decision[10] may rest upon firm ground and not be arrived at prematurely.

Summary

The Council of the Rhode Island Medical Society has considered the problem of fluoridation of communal water supplies as a means to provide mass partial control of dental caries.

The Council has reviewed the progress to date of the several controlled studies now operated in several parts of the nation and it feels that the procedure has merit.

If the evidence thus accumulating continues its present trend it may be possible to reduce the incidence of dental caries by mass fluoridation of the communal water supply. The Council recommends the continuation of controlled studies.

BIBLIOGRAPHY

1 Dean H. T. Public Health Reports 53-1443-1938.
2 Ast-Finn-McCaffrey—Am. J. Pub. Health Vol. 40 No. 6 June 1950 P. 716.
3 Hill Blayney-Wolf—Journal Dental Research Vol. 29 No. 4 August 1950 P. 534.
4 Bull F. A. Journal A. D. A. Vol. 41 No. 2 August 1950 P. 146.
5 Boyd & Cheyne Journal of Pediatrics Vol. 29 No. 3 Sept. 1946 P. 286.
6 Journal American Water Works Asso. Vol. 41 No. 7 July 1949 P. 575.
7 Faber H. A. Water & Sewage Works November 1948.
8 Jay P. Journal A. D. A. Vol. 33 April 1946 P. 489.
9 Faber H. A. Water & Sewage Works Dec. 1949. Vol. 96 No. 12 P. 465.
10 Wisconsin Fluoridation Program for Control of Tooth Decay.

DO YOUR DISABILITY INCOME POLICIES DO THE JOB YOU EXPECT OF THEM?

It Will Cost You Nothing To Find Out.

Without Obligation The R. A. DEROSIER AGENCY WILL ADVISE YOU.

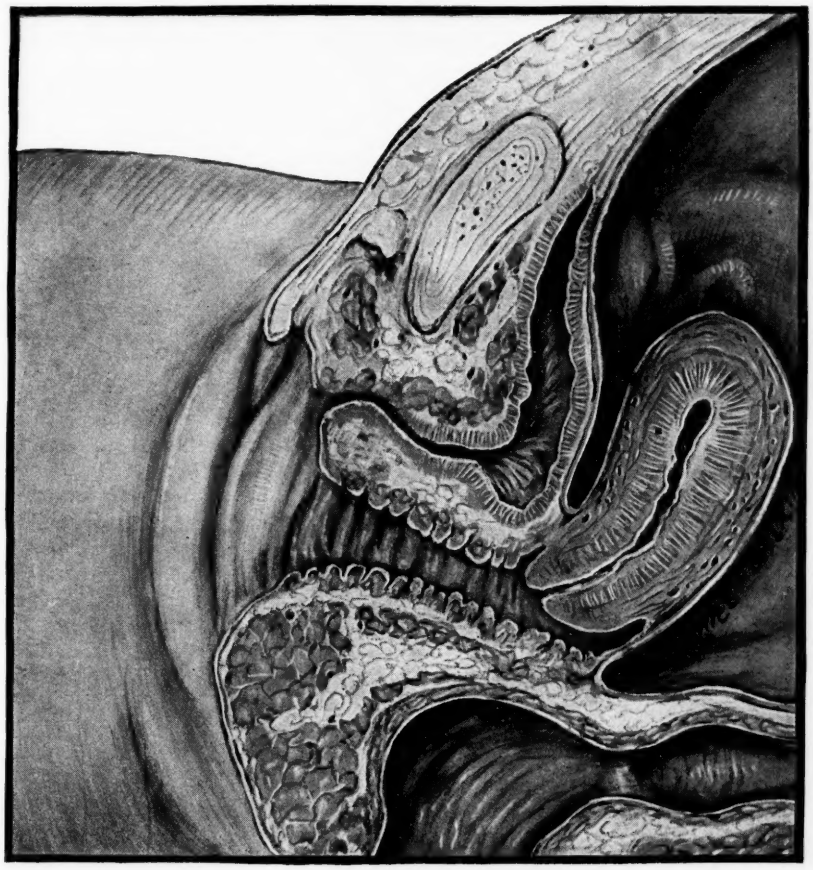
Already more than 50% of the Rhode Island physicians have insurance with us.

Phone or write:

R. A. DEROSIER AGENCY

146 Westminster Street, Providence, R. I.

GAspee 1-1391



"The thin, grey, foamy discharge associated with excoriation of the labia and vagina, strawberry spots on the cervix, and intense itching almost always means trichomoniasis. Trichomonas is associated with a mixed bacterial flora, but not necessarily with a purulent discharge."

Passmore, G. G.: Treatment of Discharges from the Vagina in Private Practice, North Carolina M. J. 11:487 (Sept.) 1950.

floraquin® —aims at restoring and maintaining a normal vaginal environment unfavorable to the growth of pathogenic organisms. Floraquin contains Diodoquin-Searle (diiodohydroxyquinoline), a potent trichomonacide and fungicide, combined with lactose, dextrose and boric acid adjusted to effect the reestablishment of the normal vaginal pH and, in turn, the normal flora. G. D. Searle & Co., Chicago 80, Illinois.

SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

MALIGNANT LYMPHOMA OF THE GASTRO-INTESTINAL TRACT

continued from page 29

picious of carcinoma. Spencer, Collins and Renshaw[33] were able to recognize only two of their fifteen cases gastroscoped as being probably lymphomatous. The absence of mucosal involvement with a radiographic diagnosis of carcinoma should bring to mind malignant lymphoma.

Differential Diagnosis

The diagnosis of malignant lymphoma of the gastro-intestinal tract is rarely made preoperatively. Carcinoma is frequently the diagnosis of choice. With lesions of the small bowel, regional enteritis and tuberculous enteritis must be considered in the differential diagnosis. An acute episode may simulate appendicitis. There are, however, some features which should raise the question of malignant lymphoma. Means[19] states that the presence of multiple ulcers of the gastro-intestinal tract or a non-obstructive small bowel lesion is significant. Roentgenographic studies of the stomach, as already specified, may give a clue. Unfortunately, peripheral glands are usually absent, or, if present, may not indicate the underlying basic pathology.

Operative Diagnosis

The surgeon must depend entirely upon his knowledge of the gross pathological appearance in order to correctly diagnose the condition, or else have available the services and knowledge of the pathologist. It is evident, not only in our study, but in other reported cases, that this gross diagnosis is too infrequently made. One would suspect that there would be many glands accessible at surgery for frozen section diagnosis, but this seems not to be the rule. Early small bowel lesions have but few mesenteric glands and these probably will show only an inflammatory reaction.

Gastric lesions apparently displayed more local lymph gland involvement, but biopsy study is usually equivocal. The lesion itself often suggests a scirrhous carcinoma because of its extensive induration. Palpable glands, however, are softer than those accompanying carcinoma. This combination should place the surgeon on his guard. In the small bowel, the lesion varies in extent, and may at times be multiple. It usually surrounds the entire bowel as an infiltrative lesion. The walls of the intestine are markedly thickened, and yet there is but slight encroachment upon the caliber of the lumen. There may be a varying degree of dilatation proximal to the lesion. The serosa is not granular, as in enteritis, but roughened. Adhesions are more frequent in malignant lymphoma. Tumefaction is usually greater than with carcinoma, and large areas of bowel may be involved. The variability of the gross pathology, as previously discussed, must not be forgotten.

Tuberculosis often has serosal involvement with localized peritonitis and kinking rather than stenosis of the involved bowel. Forty-three percent of a reported autopsy group showed caseous mesenteric nodes.[1]

Malignancy is firmer and is not as extensive as a rule. The glands are firm, indurated and are more frequently positive on biopsy. Evidence of distant metastasis may be present. Similarly, the degree of obstruction for the size of the lesion, is greater in carcinoma than in malignant lymphoma. Basically, the differentiation of large bowel pathology varies but little from similar pathology affecting the small bowel, except for acute diverticulitis, which is readily recognizable because of the surgeon's familiarity with this lesion.

The lack of specificity of clinical symptoms has previously been discussed in this paper.

Therapy

Surgery is universally accepted as the therapy of choice in bowel lesions, because of the fear of obstruction, as well as the realization that the disease may be localized. Since the response of these lesions to radiation therapy varies with radiosensitivity, such therapy seems less positive. "Softening" of the lesion by radiation with resultant perforation or hemorrhage may complicate this form of treatment. There are those who feel that gastric lesions should not be resected, but it is our feeling that gastric resection may be proper if the lesion is localized. This operative procedure should include the removal of the entire gland-bearing area. Radiation therapy should follow surgical intervention.

Nitrogen mustard is a welcomed addition to our armamentarium, but we must not expect miraculous results from its use. Many prefer to use the nitrogen mustard first because it seems to enhance the effectiveness of the radiation. It must be understood that this is only an opinion based on observation and not on actual proven facts. Damashek, Goodman, Wintrobe, Gilman and McLennon[10] suggested in 1946 that x-ray responsiveness may return after a course of nitrogen mustard therapy.

continued on page 36

IN MOUNT PLEASANT IT'S . . .

Butterfield's

DRUG STORE

Corner Chalkstone & Academy Aves.

ELMHURST 1-1957

NOW ... for maximum effect
ATTACK ATHEROSCLEROSIS WITH BOTH OXYTROPIC AND LIPOTROPIC AGENTS

OXYFAX TRADEMARK
Brand of Oxytropic Factors

Plus

LIPOFAX TRADEMARK
Brand of Lipotropic Factors

To achieve maximum therapeutic results in preventing or arresting atherosclerosis, a modern, *comprehensive* approach has been advocated—administration of oxytropic agents as well as lipotropic B vitamins to correct impaired oxidative mechanisms in addition to disturbed fat metabolism.[1,2] Availability of OXYFAX* and LIPOFAX* now makes possible convenient application of this modern form of therapy.

Each OXYFAX capsule contains:
(Composite Formula)

Thyroid U.S.P.	10-15-20-30-60 mg.
Thiamine Mononitrate	15.0 mg.
Riboflavin	7.5 mg.
Niacinamide	100.0 mg.
Ascorbic Acid	100.0 mg.

Several dosage forms containing varying amounts of thyroid permit individualized, flexible therapy. For patients requiring sedation, OXYFAX with Phenobarbital may be prescribed.

SUPPLIED: Bottles of 100 and 500 capsules.

Each LIPOFAX tablet contains:

Choline Bitartrate (Choline content, 48%)	350 mg.
Inositol	133 mg.
Pyridoxine Hydrochloride	1 mg.

SUPPLIED: Bottles of 100 and 1,000 tablets.

*The words OXYFAX and LIPOFAX are exclusive trademarks of Mezger Pharmacal Co., Inc.

1. Editorial: J.A.M.A. 141: 392 (1949).
2. Hueper, W. C.: M. Clin. North America 33: 773 (1949).

For thoroughly documented review of experimental and clinical background of OXYFAX-LIPOFAX therapy, with full details on dosage, mail this coupon today!

MEZGER PHARMACAL CO., INC.
50 ANDOVER ROAD • ROSLYN HEIGHTS, NEW YORK

Gentlemen:
Please send me without charge a copy of your brochure, "Comprehensive Medical Treatment of Atherosclerosis".

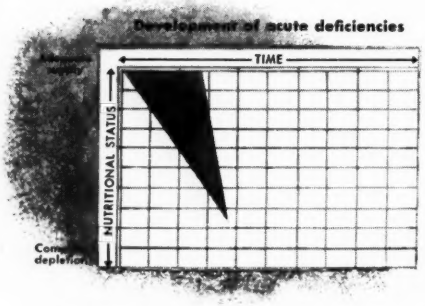
NAME.....
(PLEASE PRINT)

ADDRESS.....

CITY.....ZONE.....STATE.....

acute
vitamin deficiencies

A sudden drop from adequate to grossly inadequate vitamin intake results in fast tissue depletion and functional changes. Ordinarily, physical lesions do not appear. If tissue depletion is rapid enough, death may ensue with slight or no morphologic variation.



Treatment of acute deficiencies

Fully therapeutic dosages of all the vitamins indicated in mixed vitamin therapy should be given. Under intensive therapy recovery from acute vitamin deficiencies usually is made in a comparatively short time.

THERAGRAN supplies clinically proved, truly therapeutic dosages of all the vitamins indicated in mixed vitamin therapy.

Each Theragran Capsule contains:	
Vitamin A	25,000 U.S.P. Units
Vitamin D	1,000 U.S.P. Units
Thiamine HCl	10 mg.
Riboflavin	5 mg.
Niacinamide	150 mg.
Ascorbic Acid	150 mg.

Bottles of 30, 100 and 1000

When the deficiency is acute specify Theragran and correct the patient's diet

THERAGRAN

THERAPEUTIC FORMULA VITAMIN CAPSULES SQUIBB

SQUIBB

MALIGNANT LYMPHOMA OF THE GASTRO-INTESTINAL TRACT

continued from page 34

In our hospital the nitrogen mustard is given intravenously daily for four doses (0.1 mg./Kg. of body weight.) If the patient exhibits toxic symptoms, the injections are given every other day. Further therapy is instituted only after a six week period of rest, and is continued as needed.

Results of Treatment

Of the 36 cases presented herein, five have been lost following discharge. With the remaining 31 cases, it is understandable why dogmatic conclusions cannot be made concerning the results of therapy. The results, however, can be presented with this reservation in mind—purely that of 31 cases.

The accompanying tables present the number of cases and the average length of life following admission and diagnosis of malignant lymphoma. These deal separately with each major subdivision of the gastro-intestinal tract. It can be readily seen that the untreated cases of gastric lymphoma, with its average longevity of 25 days, as contrasted to the longer "longevity" of the treated cases, regardless of type of therapy, is a salient finding. This was found to be true similarly in the untreated small and large bowel lesions. In both small bowel and gastric lesions, definitive surgery presented the key to longevity and strangely, the combined therapy of definitive surgery and radiation did not measure up to surgery alone. This may have been due to the degree of pathological involvement of the cases which were subjected to both weapons, the surgeon using surgery alone, for what appeared to be the solitary localized lesion. Our case of malignant lymphoma of the stomach treated with nitrogen mustard, as well as surgery and x-radiation survived six months, while our small bowel lesion, similarly treated, survived a full year. Five of our recurrent cases are without follow-up information following discharge from hospital therapy.

Summary of Cases and Results

TABLE II — Stomach

	Number of Cases.	*Longevity After Admission, in Days.*	*Average Longevity After Admission, in Days.*
No definitive treatment	5	24-34-9-43-16 days	25
X-ray Alone	3	17-32-270 days	106
Surgery—Definitive	3	27-37 days 13 years—10 months	1706
Palliative	2	40-26 months	410
Surgery and X-ray	1	6 months	160
Surgery, X-ray and Nitrogen mustard	1	6 months	160

Table III — Small Bowel

	Number of Cases.	Longevity After Admission, in Days.	Average Longevity After Admission, in Days.
No definitive treatment	4	2-9-1-23 days	9
Surgery—Definitive	3	4 years 10 months 28 days	894
Palliative	1	16 days	16
Surgery—Definitive and X-ray	3	100-122 147 days	90
Palliative	1	16 days	16
Surgery and X-ray plus Nitrogen mustard	1	1 year	365

TABLE IV — Large Bowel

	Number of Cases.	Longevity After Admission, in Days.	Average Longevity After Admission, in Days.
No definitive treatment	1	9 days	9
X-ray alone	1	39 days	39
Surgery—Definitive and Palliative	1	30 days 9 days	30
Surgery—Definitive and X-ray	1	162 days	162
Palliative	1	34 days	34
Surgery, X-ray and Nitrogen mustard	0		

Note that ten of these cases died within one month after admission.

Prognosis

Despite the varied forms of treatment used, either singly or collectively, the prognosis in this condition remains grave. Generalizations are difficult, but Stout[34] has presented the following.

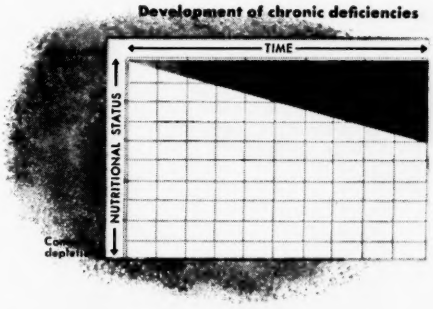
1. "The least malignant tumors of this group are the giant follicle tumors; the most malignant, the reticular cell tumors."
2. "The favorable sites of the involvement are the mouth, pharynx, gastro-intestinal tract. cervical and axillary nodes: the unfavorable sites, the spleen, thyroid, mediastinal and retroperitoneal nodes."
3. "Cases associated with leukemia, have, invariably, a fatal outcome."
4. "Lesions appearing before the age of 20 have only a minute chance of survival; those appearing after the age of 40 have the greatest chance of survival."
5. "Lesions which involve more than two contiguous anatomical structures have a poor prognosis."

concluded on next page

chronic
vitamin deficiencies

When vitamin intake is just below the adequate, deficiencies develop slowly. As time goes on lesions appear. They are insidious in onset and slow in regression, even under intensive therapy. Many chronic lesions progress uneventfully. The patient accepts his ill-health as normal.

Development of chronic deficiencies



Treatment of chronic deficiencies

Chronic deficiencies require prolonged therapy. At first treatment should be intensive. A much longer period of complete but less intensive treatment should follow. For a year after apparent recovery the patient should be given fully protective amounts of the essential nutrients.

THERAGRAN supplies all of the vitamins indicated in mixed vitamin therapy in clinically proved, truly therapeutic dosages.

Each Theragran Capsule contains:	
Vitamin A	25,000 U.S.P. Units
Vitamin D	1,000 U.S.P. Units
Thiamine HCl	10 mg.
Riboflavin	5 mg.
Niacinamide	150 mg.
Ascorbic Acid	150 mg.

Bottles of 30, 100 and 1000

When the deficiency is chronic specify Theragran and correct the patient's diet

THERAGRAN

THERAPEUTIC FORMULA VITAMIN CAPSULES SQUIBB

SQUIBB

"THERAGRAN"—T. M., E. R. SQUIBB & SONS

Moreton[22] claims that the longer the duration of symptoms and signs before the diagnosis is made, the better the possibility of ultimate cure.

Usher and Dixon, as quoted by Weinberger and Poltauf[39] stated in their review that the average survival for lympho-sarcoma of the small bowel is nine months; that of the rectum; two years; that of the cecum, eight months. Malignant lymphoma of the small bowel is fatal usually within a year after surgical intervention.

Tables II, III, and IV illustrate the similarity in prognosis of our cases. Survival of one year was the exception, being limited to four cases. Of these four, two were lesions of the stomach, one treated by definitive surgery (gastrectomy) and the other treated by palliative surgery. The remaining two were small bowel lesions, one treated by definitive surgery, the other by definitive surgery, x-ray and nitrogen mustard. The average survival period of gastric lesions was fourteen and one-half months, of small bowel lesions, seven months, or large bowel lesions, nine and one-half months.

Summary

1. A series of 36 cases of malignant lymphoma of the gastro-intestinal tract, as found over a 20 year period survey of Rhode Island Hospital records, is presented.
2. The need for standardization of nomenclature is again emphasized.
3. The pathology and clinical patterns of this condition are reviewed.
4. Diagnostic procedures are evaluated.
5. An attempt is made to describe gross surgical characteristics which may help the surgeon in diagnosing the malignant lymphoma at surgery.
6. Therapy of such lesions has been limited to surgery, x-ray therapy or a combination of both. The experience of two such cases in which nitrogen mustard therapy played a part is presented. No conclusions may be drawn from such a limited use.

A bibliography of 41 articles will be furnished by the authors to anyone desiring it.

RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE

concluded from page 22

11% within 10 years, 6% within 15 years, and 1.4% within 20 years; thus the liklihood of recurrence diminishes as time progresses.

Of the 699 patients still living 20 years after onset of rheumatic fever, 50% lead active lives. 560 have limitation of activity classified as none too slight, 133 have moderate limitation, while 6 have marked limitation of activity.

There are two important points in considering the prognosis of rheumatic fever. First, the recurrent pattern of rheumatic fever cannot be predicted and secondly, those individuals who do badly after adolescence are usually those with enlarged hearts.

In the future, the course of rheumatic fever and rheumatic heart disease will probably be altered by the following: (1) the greater use of preventative measures such as the vigorous treatment of strep infections with penicillin and the prophylaxis against strep infections by long term administration of sulfa or penicillin, (2) the use of ACTH or cortisone—the long range effect of which is at present unknown, (3) the much greater chance now of preventing or curing SBE, (4) the use of surgery to correct certain valvular deformities. Penicillin treatment begun early (within 24-48 hours) and continued for 10 days in the treatment of strep infections should be a great step forward in preventing the subsequent development of rheumatic fever. As prophylaxis against further strep infections in those who have already had one attack of rheumatic fever, sulfa drugs may be used for those in the low financial bracket while long term penicillin can be used in those who can afford the $100 a year expense of penicillin. However, in considering prophylaxis against rheumatic fever it must be remembered that about ⅓ of cases of acute rheumatic fever develop following a silent clinically unrecognized hemolytic strep infection.

Duffy My Druggist
Plainfield St. at Laurel Hill Ave.,
Providence, R. I.
Reliable Prescription Service
Since 1922

Curran & Burton, Inc.
GENERAL MOTORS
HEATING EQUIPMENT
COAL OIL
TURKS HEAD BUILDING, PROVIDENCE
GAspee 8123


cleared...
WITH JUST 2 DROPS
Privine .05%
"Privine ... gives the most prolonged constriction —sometimes for six or more hours. A very few drops of privine are as effective in greater amounts of less potent constrictors."
Ciba
SUMMIT, NEW JERSEY

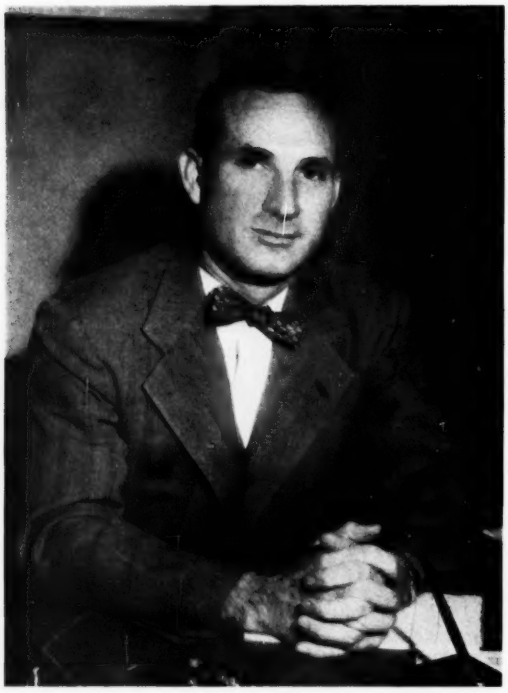
DISTRICT MEDICAL SOCIETY MEETINGS

WOONSOCKET DISTRICT MEDICAL SOCIETY

A meeting of the Woonsocket District Medical Society was held at the Club Canadien on November 28, 1950.

The meeting was called to order by President Leo Dugas at 9 p.m. The minutes of the previous meeting were read and accepted. Dr. Dugas then appointed Dr. F. J. King, Dr. T. J. Lalor, and Dr. Henri Gauthier as an election committee.

The Committee returned the following slate of officers for 1951: Dr. Alfred King, President; Dr. George A. Crepeau, Vice-President; Dr. Emil A. Kaskiw, Secretary; and Dr. Paul E. Boucher, Treasurer. Delegates to the House of Delegates of the Rhode Island Medical Society: Dr. Victor Monti and Dr. Saul Wittes. Councillor: Dr. Leo Dugas; alternate Councillor: Dr. T. J. Lalor. Censors: Dr. F. J. King, Dr. James McCarthy and Dr. L. V. Conlon. On presentation of the slate to the body it was unanimously voted to accept the new slate of officers.



ALFRED E. KING, M.D.
President, 1951
WOONSOCKET DISTRICT MEDICAL SOCIETY

Dr. Alfred King then presided over the meeting. The first order of business was the establishment of regular meetings of the society to be held the 2nd Tuesday of every other month.

A motion was made and carried to admit Dr. Wilfrid Ethier as a new member of the local society.

A committee of three, comprising Dr. McKenna, Dr. Thomas and Dr. Kaskiw, was appointed to investigate the payment of fees on relief cases by the welfare department.

Dr. Wittes made a motion which was carried that the local society go on record as offering its assistance and support to the local Director of Civil Defense.

The meeting was adjourned at 10:45 p. m. A buffet luncheon was served to 25 members present at the meeting.

Respectfully submitted,
EMIL A. KASKIW, M.D., *Secretary*

NEWPORT COUNTY MEDICAL SOCIETY

The meeting was called to order by President Henry Brownell at 9:00.

The minutes of the previous meeting were read and approved.

Dr. Samuel Adelson was appointed advisor to the State Selective Service committee.

Dr. Anthony Caputi was appointed to the Diabetic Committee, former and present members including Dr. Edward Zamil and Dr. Louis Burns, Chairman.

Application was received from Dr. Ernest Landsteiner of Providence for membership in this society. It was held up pending revision of the constitution, Section 3, pertaining to eligibility. Suggested revision to include "or any other desirable doctor of medicine" was approved by the Newport County Medical Society.

Mr. Frank Real of Wisconsin spoke on Medical Economics.

The meeting adjourned at 11:30 p. m.

Collation.

Respectfully submitted,
M. OSMOND GRIMES, M.D., *Secretary*

concluded on page 45

DISTRICT MEDICAL SOCIETY MEETINGS

concluded from page 40

KENT COUNTY MEDICAL SOCIETY

A special meeting of the Kent County Medical Society was called to order by our President, Joseph C. Kent, at 9 o'clock, October 31, 1950.

The minutes of the previous meeting were read and approved.

A working draft of the proposed by-laws and the rules and regulations for the staff of the Kent County Memorial Hospital were discussed further by the members.

Some revisions were made and these were voted and approved upon by the members attending the meeting. After this working draft had been amended and approved by all attending, it was then returned to the Hospital Committee to be presented to the Board of Trustees at their next meeting.

The meeting adjourned at 11:30 p. m.

Respectfully submitted,

EDMUND T. HACKMAN, M.D., *Secretary*

PAWTUCKET MEDICAL ASSOCIATION

A business meeting of the Pawtucket Medical Association was held at the Nurses Auditorium, Memorial Hospital, on November 22, 1950.

The meeting was called to order by President James P. Healey, at 12 noon.

Among several communications an outline disaster plan sent by the Rhode Island Medical Society was noted particularly.

The question was raised as to whether the Physicians Surgical Plan would include payment for medical services the first four hospital days in the future. It was felt that the general practitioner and internist should benefit more from this plan than at present.

Dr. Charles Farrell reported from the Physicians Service Corporation. A committee appointed by the State Medical Society is reexamining and revising the fee schedule. In general it recommends increases not yet adopted. X-rays and consultations might be added as benefits.

A committee was appointed by the President to arrange the annual Christmas party.

The meeting adjourned at 1:10 p. m.

Attendance 15.

Respectfully submitted,

HRAD H. ZOLMIAN, M.D., *Secretary*

MONDAY, FEBRUARY 5 . . .
NEXT MEETING OF
PROVIDENCE MEDICAL ASSOCIATION

Prescription Perfect

RED LABEL • BLACK LABEL
Both 86.8 Proof

Every drop of Johnnie Walker is made in Scotland—using only Scotland's crystal-clear spring water. Every drop of Johnnie Walker is distilled with the skill and care that comes from many generations of fine whisky-making.

Every drop of Johnnie Walker is guarded all the way to give you *perfect* Scotch whisky . . . the same high quality the world over.

Born 1820 . . . still going strong

JOHNNIE WALKER

BLENDED SCOTCH WHISKY

Canada Dry Ginger Ale, Inc., New York, N.Y., *Sole Importer*

FACTS ABOUT A.M.A. DUES FOR 1951

1. American Medical Association membership dues for 1951 are $25.00.

2. Fellowship dues for 1951 are $5.00 and exclusive of membership dues.

3. American Medical Association membership dues are levied on "active" members of the Association. A member of a constituent association who holds the degree of Doctor of Medicine or Bachelor of Medicine and is entitled to exercise the rights of active membership in his constituent association, including the right to vote and hold office as determined by his constituent association, and has paid his American Medical Association dues, subject to the provisions of the By-Laws, is an "active" member of the association.

4. American Medical Association membership dues are payable through the component county medical society or the constituent state or territorial medical association, depending on the method adopted locally.

5. Fellowship dues are payable directly to the headquarters of the American Medical Association, 535 North Dearborn Street, Chicago 10, on receipt of the bill for such dues.

6. A dues paying, active member is eligible for Fellowship and may request such status by direct application to the Secretary of the American Medical Association. Applications for Fellowship are subject to approval by the Judicial Council of the Association.

7. Commissioned medical officers of the United States Army, the United States Navy, the United States Air Force or the United States Public Health Service, who have been nominated by the Surgeons General of the respective services, and the permanent medical officers of the Veterans Administration, who have been nominated by its Chief Medical Director, may become Service Fellows on approval of the Judicial Council. Service Fellows need not be members of the component county or constituent state or territorial associations or the American Medical Association and do not pay Fellowship dues. They do not receive any publication of the American Medical Association except by personal subscription. If a local medical society regulation permits, a Service Fellow may elect to become an active member of a component and constituent association and the American Medical Association, in which case he would pay the same membership dues as any other active member and received a subscription to *The Journal of the American Medical Association.*

8. An active member of the American Medical Association may be excused from the payment of American Medical Association membership dues when it is deemed advisable by the Board of Trustees, provided that he is excused from the payment of full dues by his component society and constituent association.

The following may be excused in accordance with this provision: (a) members for whom the payment of dues would constitute a financial hardship as determined by their local medical societies; (b) members in actual training for not more than five years after graduation from medical school, and (c) members who have retired from active practice.

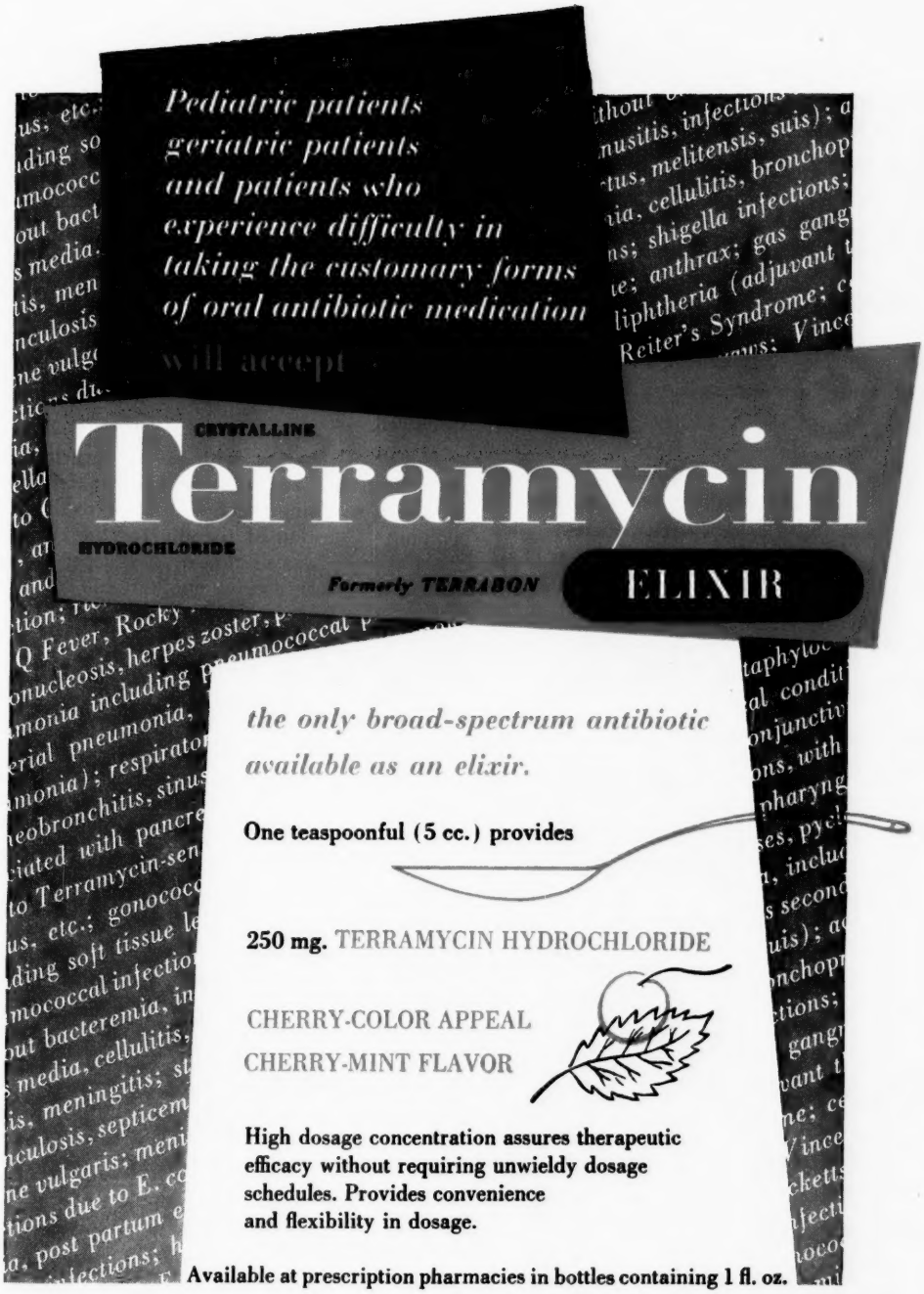
9. Active members of the American Medical Association are not excused from the payment of American Medical Association membership dues by virtue of their classification by their local societies as "honorary" members or because they are excused from the payment of local and state dues. Active members may be excused from the payment of American Medical Association membership dues only under the provision described in Paragraph 8 above.

10. American Medical Association membership dues include subscription to *The Journal* of the American Medical Association. Active members of the Association who are excused from the payment of dues will not receive *The Journal* except by personal subscription at the regular subscription rate of $15.00 a year.

11. Member Fellows may substitute one of the special journals published by the Association for *The Journal* to which they are entitled as members. A Fellow who substitutes a special journal will not also receive *The Journal.*

12. A member of the American Medical Association who joins the Association on or after July 1 will pay membership dues for that year of $12.50 instead of the full $25.00 membership dues.

concluded on page 48



Antibiotic Division **Pfizer** CHAS. PFIZER & CO., INC.
Brooklyn 6, N.Y.

AMA DUES FOR 1951

concluded from page 46

13. An active member is delinquent if his dues are not paid by December 31 of the year for which dues are prescribed and shall forfeit his active membership in the American Medical Association if he fails to pay the delinquent dues within thirty days after the notice of his delinquency has been mailed by the Secretary of the American Medical Association to his last known address.

14. Members of the American Medical Association who have been dropped from the Membership Roll for nonpayment of annual dues can not be reinstated until such indebtedness has been discharged.

15. The apportionment of delegates from each constituent association shall be one delegate for each thousand (1,000), or fraction thereof, *dues paying active members of the American Medical Association* as recorded in the office of the Secretary of the American Medical Association on December 1 of each year.

RHODE ISLAND DERMATOLOGICAL SOCIETY

The Rhode Island Dermatological Society held its first clinical meeting on November 13, 1950 at the Skin Out-Patient Department, Rhode Island Hospital, Providence, R. I. The following cases were presented and discussed:

Keloidal Acne Conglobata, of 27 years' duration, involving the buttocks, neck, and axillae. The lesions on the buttocks were represented by large abscesses, Confluent fistulas, and sinuses, from which there was considerable drainage of pus, blood, and serum. Large bridge scarring was also noted. The lesions on the buttocks suggested a cuirasse-like distribution. This patient improved remarkably under aureomycin therapy, and the question of using cortisone at a later date was discussed.

Hodgkins' Disease, with severe pruritus, and with a generalized scabies-like eruption. This patient is receiving roentgen therapy to the mediastinum. Question of therapy for the cutaneous manifestation was discussed. (A paper is being prepared on this case for publication.)

Hyperhidrosis of palms present since the age of eight in a young woman. Palms were cool and wet, and sweat actually dripped from hands. She was seriously handicapped in her employment. Nerve block gave no results. 300 Mg. of Banthine orally decreased the amount of hyperhidrosis, but caused dryness of mucous membrane in the mouth. Potassium iodide, orally, for relief of symptoms of mouth dryness was ineffective.

Pemphigus Vulgaris, receiving oral aureomycin, remained free of lesions for six months, but is now recurring. Cortisone therapy was advised.

Molluscum Contagiosum showed good results after the local use of resin of podophylin.

Exfoliative Dermatitis with arthropatic psoriasis in which ACTH therapy gave no results, but is improving gradually under cortisone therapy.

Other cases discussed were Parapsoriasis, Febrile Panniculitis (Weber Christian's Disease), Exfoliative Dermatitis, Mycosis Fungoides, Dermatitis Herpetiformis, and Atopic Dermatitis.

Respectfully submitted,

BENCIL L. SCHIFF, M.D., *Secretary*

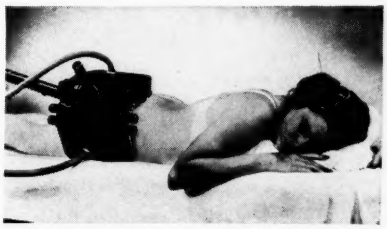
JUNE 10 . . .

AMA MEETING AT ATLANTIC CITY

Why Deep Heating of the Burdick X 85 *IS EFFECTIVE*

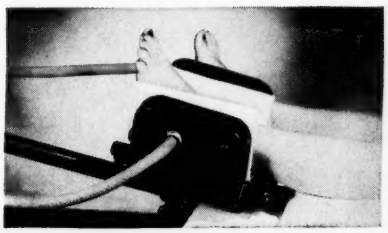
A 13.560 MC Frequency

The Contour Applicator



Chosen by Burdick as the most efficient frequency for induction heating — the more effective method of heating deep tissue, [1] the 13.560 megacycle frequency (approximately 22 meters) is maintained precisely in the X 85 by a crystal control. A control which is already operating successfully in almost 3,000 units—more than have been built by any other manufacturer.

With the new Burdick Contour Applicator, doctors and technicians are making applications to the hip, legs, and shoulder, easily . . . quickly. And most effectively, because *one single spiraled* coil produces even induction heating over the entire treatment area.



The X 85 was *first* in winning recognition from all four organizations: Council on Physical Med., A.M.A.; F.C.C.; Underwriters'; and Dept. Transport, Canada.

See your nearby Burdick dealer today, or write the Burdick Corporation, Milton, Wis., for additional information.

[1] "Fundamentals of Physical Medicine of Interest to General Practitioners," Hovarth, J.A.M.A. 136:9 (Feb. 28) 1948.

ANESTHETIC GASES • PHYSICIANS', SURGEONS', MEDICAL AND HOSPITAL SUPPLIES

SMITH-HOLDEN INC.

Across from St. Joseph's Hospital

624 BROAD STREET • PROVIDENCE

HOSPITAL BEDS • WHEEL CHAIRS • TRUSSES • BELTS • SUPPORTS • SICK ROOM SUPPLIES

RHODE ISLAND MEDICAL SOCIETY, NECROLOGY, 1950

VINCENT A. BIANCHINI, M.D., who had been on the staffs of St. Joseph's Hospital and Roger Williams General Hospital, died on October 8, 1950. He was born on January 4, 1909. Doctor Bianchini attended Providence public schools, and after graduating from Classical High School, cum laude, he entered Brown University. He graduated from Boston University School of Medicine, and his internship was served at Mercy Hospital in Springfield. Doctor Bianchini was commissioned a first lieutenant in the Army Medical Corps during World War II, later attaining the rank of captain. He was a member of the Rhode Island Medical Society and the Providence Medical Association.

ERNEST A. CHARON, M.D., who practiced medicine in the mill village of Manville for 50 years, died on December 9, 1950. He was born in Chambly Basin, Province of Quebec, Canada, March 26, 1868. After he came to the United States, Doctor Charon established an office in Providence where he practiced for nine years. He then went to Manville where he attended to the villagers' ailments for a half century. Doctor Charon studied medicine at Laval University, Montreal. He was a member of the American Medical Association, The Providence Medical Association, the Woonsocket Medical Society, and many fraternal and religious organizations. He served as health officer in the Town of Lincoln for many years.

JAMES H. CROWLEY, M.D., was born in Providence May 21, 1910. He was a graduate of St. Paul's School, Edgewood, and the Cranston High School. He graduated from Providence College in 1934 with a bachelor of science degree. In 1938 he graduated from Tufts Medical School and he served his internship for two years at Rhode Island Hospital. Doctor Crowley was a member of the medical staff on Rhode Island Hospital, the Providence Medical Association, the Rhode Island Medical Society, and the American Medical Association. He died on April 3, 1950.

ROBERT L. FARRELL, M.D., was born in Providence on November 12, 1906. He was graduated from La Salle Academy, from Holy Cross College, and from Tufts Medical College. He served as an intern in St. Luke's Hospital in New Bedford, and in Rhode Island Hospital the following two years. During World War II, he served as a major in the Army Medical Corps, and served two years in the European theater. Doctor Farrell was associated with Rhode Island Hospital, St. Joseph's Hospital, Charles V. Chapin Hospital, and the Roger Williams General Hospital. He was a member of the American Medical Association, Rhode Island Medical Society, and the Providence Medical Association. He died on October 3, 1950.

WALTER J. GRENOLDS, M.D., prominent Westerly physician and president of the executive committee of Westerly Hospital's medical staff, died February 18, 1950. He was 66 years old. A resident of Westerly for 25 years, Doctor Grenolds lived at 9 Elm Street, Westerly, where he maintained his offices. He was an eye, ear, nose and throat specialist. Doctor Grenolds was born in Troupsburg, New York, September 12, 1883. He was a graduate of the University of Buffalo in 1910, when he received the degree of Doctor of Medicine. Doctor Grenolds became a general practitioner in Andover, New York until 1920. Between 1920 and 1925 he studied medicine in Europe, attending the University of Vienna, and medical schools in England, France and Germany. On the staff of Westerly Hospital, he was also a member of the staff of the South County Hospital, Wakefield, and of hospitals in Boston and New York. He was a Fellow of the American College of Physicians and Surgeons, and a member of the American Medical Association, the Rhode Island Medical Society, and the Washington County Medical Association. He held membership in Narragansett Commandary, Knights Templar, and Franklin Lodge F. & A. M.

WILLIAM H. HODGSON, M.D., died on June 4, 1950. He was a graduate of La Salle Academy, Providence College, and Georgetown Medical School. He interned at St. Joseph's Hospital and was resident physician and surgeon at Polyclinic Hospital in Harrisburg, Pennsylvania, before beginning his practice in Providence. Doctor Hodgson was on the courtesy staff at Roger

continued on page 52

NOW PROOF... in an instant, Doctor, PHILIP MORRIS are LESS IRRITATING

Just Make This Simple Test:

1 **... light up a PHILIP MORRIS**

Take a puff—DON'T INHALE. Just s-l-o-w-l-y let the smoke come through your nose. Easy, isn't it? AND NOW...

2 **... light up your present brand**

DON'T INHALE. Just take a puff and s-l-o-w-l-y let the smoke come through your nose. Notice that bite, that sting? Quite a difference from PHILIP MORRIS!

YES, your own *personal experience* confirms the results of the clinical and laboratory tests.* With proof so conclusive, would it not be good practice to suggest PHILIP MORRIS to your patients who smoke?

PHILIP MORRIS

Philip Morris & Co., Ltd., Inc.
100 Park Avenue, New York 17, N. Y.

Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245; N. Y. State Journ. Med., Vol. 35, 6-1-35, No. 11, 590-592; Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154; Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60

Williams General and Rhode Island Hospitals. He was a member of the Rhode Island Medical Society, the Providence Medical Association, and the American Medical Association.

JACOB S. KELLEY, M.D., a Providence physician for 45 years, died March 18, 1950. He was 70 years old. Doctor Kelley was roentgenologist at the Charles V. Chapin Hospital from 1925 to 1947 and had been a consulting doctor there since 1947. Prominent in Masonic affairs, he was a member of Overseas Lodge, F. & A. M., the A. A. Scottish Rite, and the Palestine Temple. He was a member of the temple's drum and bugle corps for many years. Doctor Kelley was born in Boston, September 3, 1879, and lived there until 1893 when his family moved to Newton, Massachusetts. He graduated from Harvard Medical School in 1904 and became an interne at St. Joseph's Hospital, Providence in 1905. He opened his Smith Street office the next year. He was associated with Roger Williams General Hospital, the Providence Lying-In Hospital and the Veterans Administration Hospital. In the First World War he became a major in the medical corps. He was active in the Rhode Island National Guard until 1940. He was a past president of the Rhode Island Medico-Legal Society; a past commander of Providence Post, American Legion, and was a member of the department executive committee at the time of his death. He was a member of the Rhode Island Medical Society, the Providence Medical Association, the New England Roetgen Ray Society, the Radiological Society of North America, Inc., and was a fellow of the American Medical Association.

JOHN F. KENNEY, M.D., a practicing physician in Pawtucket for 30 years, long active in operation of Memorial Hospital and a former president of the Rhode Island Medical Society, died March 20, 1950. He was in his 61st year. A resident of Pawtucket for 35 years, he retired from active practice about five years ago but had remained as consultant at the Memorial Hospital. Former chief of the medical staff, he founded the John F. Kenney Tumor Clinic at the hospital about 10 years ago. Since his retirement he had continued as consultant with several hospitals in this area, and was a member of the basic sciences board in the State Department of Health and the advisory board of the Rhode Island Curative Center. Earlier this year he was named by Governor Pastore to the committee studying conditions at the State Infirmary. Howard. He was a consultant at the Rhode Island, Roger Williams and Providence Lying-In Hospitals; the Sturdy Memorial Hospital, Attleboro; the State Sanitorium, Wallum Lake; and the State Infirmary, Cranston. Long an authority on industrial medicine, he was a former president of the Industrial Physicians and Surgeons of New England. For a number of years he was industrial physician for the Lorraine Manufacturing Co. He was a fellow in the American College of Surgeons, American Board of Internal Medicine (1933) and a life member of the American Medical Association. Doctor Kenney was born in New Bedford, January 5, 1890. He was graduated from Mosher Academy, New Bedford, and Tufts Medical School, cum laude, in 1913. He interned at Rhode Island Hospital before beginning practice in Pawtucket.

GEORGE S. MATHEWS, M.D., a Rhode Island physician for more than 50 years, died on December 1, 1950. Licensed to practice in Providence in 1895, Doctor Mathews specialized in internal medicine, particularly of the heart and lungs. For 33 years he was on the staff of Rhode Island Hospital. He also was consulting physician at Charles V. Chapin, South County, and Pawtucket Memorial Hospitals as well as at Wallum Lake Sanatorium. Doctor Mathews was born in Temple, Pennsylvania, on November 1, 1862. He attended the Providence public schools and graduated from Classical High School. He then attended Brown University and was made a member of Phi Beta Kappa. After graduating from Pennsylvania Medical School, Dr. Mathews did postgraduate work in medicine at Harvard University, and at the universities of Edinburgh and Munich. He served his internship at the Lankenau Hospital in Philadelphia. Doctor Mathews was president of the Providence Medical Association in 1904-05 and of the Rhode Island Medical Society in 1920.

HARRY C. MESSINGER, M.D., a prominent ophthalmologist in Providence and a member of the consulting staffs of several Rhode Island hospitals, died on August 2, 1950. He was chairman of the eye nerve clinic at Rhode Island Hospital, and former chief visiting surgeon for the hospital's eye department, and a member of the consulting staff of Butler Hospital and the Emma Pendleton Bradley Home. He was also visiting ophthalmologist at the Charles V. Chapin and Providence Lying-In Hospitals. Doctor Messinger was born in East Providence on September 17, 1881. He attended elementary schools in that town and later the Roxbury Latin School. After two years' study at the Massachusetts Institute of Technology, he entered Harvard Medical School. Doctor Messinger did postgraduate work in Boston and New York, and spent four summers studying in Vienna. He was a former president of the Providence Medical Association, and was a member of the Rhode Island Medical Society and the American Medical Association.

ALAN E. O'DONNELL, M.D., 45, assistant chief on the neurological staffs of the Charles V. Chapin and Rhode Island Hospitals, died March 3, 1950. He was a member of the medical staff of the cash sickness division of the Department of Employment Security. Doctor O'Donnell was resident physician in the neuro-psychiatric department at the Chapin Hospital, and was examining physician in the division of services to crippled children in the State Department of Health. He had been a practicing physician in Providence for the past 15 years, and was on the courtesy staff of St. Joseph's and Butler Hospitals. During World War II, he served as examining neurological physician with the U. S. Army. Doctor O'Donnell was born in Providence, July 17, 1905, and he was graduated from La Salle Academy and Providence College. After his graduation from Jefferson Medical School in 1930, Doctor O'Donnell served internships at St. Agnes Hospital in Philadelphia, and at the Chapin Hospital here. He was a member of the Rhode Island Medical Society, the Providence Medical Association, the Rhode Island Neurological Society, the American Medical Association, and the medical fraternity Omega Upsilon Phi. He also held memberships in the Thomistic Guild of Providence College and the Third Order of St. Dominic.

JAMES L. WHEATON, M.D., one of the best-known physicians in the Blackstone Valley, was born on July 9, 1868. He was a member of the Rhode Island Medical Society and Pawtucket Medical Association. Beside a lifelong interest in the hospital he helped develop the Pawtucket Memorial, he devoted much time to the Pawtucket Boys' Club and was a trustee of that institution since its inception. Doctor Wheaton was honorary president of the Memorial Hospital and a member of its board of trustees. After studying at Brown and Harvard Universities, and in Germany, he established a practice in Pawtucket. Doctor Wheaton died on September 19, 1950.

GEORGE F. WHITE, M.D., was born in Warwick Neck, May 30, 1879. He was a graduate of the Physicians and Surgeons College, Boston. Doctor White interned at the Channing Hospital and did postgraduate work at Boston City and Massachusetts General Hospitals. He was a member of the staff of Roger Williams General Hospital and a former member of the Cranston school committee. He served on the draft boards in Cranston for both World Wars and was at one time town physician in Warwick. Doctor White was a member of the American Medical Association, Rhode Island Medical Society, and Providence Medical Association. Doctor White died September 27, 1950.

PEARL WILLIAMS, M.D., a practicing physician in Providence for more than 50 years and a member of the staff of the Charles V. Chapin Hospital, died March 13, 1950. Born in Canterbury, Connecticut, May 20, 1874, he was graduated from the College of Physicians and Surgeons in Baltimore. He interned at the Mercy Hospital, Baltimore. Doctor Williams was resident physician in the Baltimore City Hospital from 1896 to 1897 and studied in Berlin and Vienna for a short time before coming to Providence. Doctor Williams was associated with the Rhode Island Hospital out patient department for pulmonary tuberculosis for more than 20 years. He was a 32nd degree Mason and the Masonic orders he belonged to included the Orpheus Lodge, Providence Royal Arch Chapter, St. John's Commandery and Palestine Shrine. He also was a member of the Providence Art Club, former member of the University Club, charter member and vice president of the Mt. Tom Club, a member of the Amos Throop Club, and also the American Medical Association, the Providence Medical Association and the Rhode Island Medical Society.

UBALDO ZAMBARANO, M.D., executive secretary of the Providence Tuberculosis League and president of the Providence Medical Association, died on May 30, 1950. For nine years before becoming executive secretary and medical director of the Providence Tuberculosis League he was superintendent of the state sanatorium at Wallum Lake. Doctor Zambarano devoted his professional life to the field of tuberculosis. He attracted national attention through papers he read at the meetings of the American College of Chest Physicians, and he had served as Rhode Island governor for that organization. He was born on June 29, 1899. After graduating from Classical High School he attended Georgetown University. He interned at the Gallinger Municipal Hospital in Washington and then served more than two years as resident physician in the municipal tuberculosis hospital in Detroit. In 1928 he returned to Providence to start a practice. In September of the following year Doctor Zambarano was named assistant to the executive secretary of the Tuberculosis League. Ten years later Doctor Zambarano was appointed superintendent of the state sanatorium. In the preceding years he had served as tuberculosis specialist at Charles V. Chapin Hospital. He left the Wallum Lake post in 1948 to become associated again with the Tuberculosis League. In recent years Doctor Zambarano had been chief of the State Division of Tuberculosis Control. He directed the mass x-ray surveys which have been made in many parts of the state. He was elected president of the Providence Medical Association in January of 1950. Doctor Zambarano was a member of the Rhode Island Medical Society and served as chairman of one of its committees on tuberculosis. He was one of the organizers of the Tuberculosis Rehabilitation Society, serving as its treasurer.

BOOK REVIEWS

POST-GRADUATE GASTROENTEROLOGY, Edited by Henry L. Bockus, M.D., W. B. Saunders Co., Philadelphia, 1950.

This excellent volume consists of various lectures comprising a course given under the sponsorship of the American College of Physicians in Philadelphia in December MCMXLVIII and is edited by Dr. Henry L. Bockus who is professor of gastroenterology at the University of Pennsylvania and Graduate School of Medicine. There are fifty-three contributors to this volume which makes a book review a most difficult task.

The various chapters deal with diseases of the esophagus, problems of gastric secretion, gastric neoplasms, the medical and surgical aspects of peptic ulcer. There is a chapter concerned with the application of neuropsychiatry to gastrointestinal problems and many other discussions which cover the entire gastrointestinal tract.

This volume obviously is not intended for the general practitioner but in my opinion would constitute a favorable addition to a library shelf as a general reference book and will be appreciated by the internist interested in gastrointestinal problems. Most of the contributions are from the Philadelphia group who in the opinion of the reviewer stand high in the study of gastrointestinal problems. There are many informative graphs and reproductions of x-ray films which illustrate the problems discussed. The book is extremely well arranged and well printed. It would be utterly impossible to select any one subject of discussion as they are equally informative and contributed by men of outstanding research or clinical ability.

It may be reiterated that this volume can be highly recommended as a reference work and for study by the gastroenterologist.

RUSSELL S. BRAY, M.D.

THE CYTOLOGIC DIAGNOSIS OF CANCER by the Staff of the Vincent Memorial Laboratory of the Vincent Memorial Hospital. W. B. Saunders Co., Phil., 1950. $6.50.

This book, prepared by members of the staff of the Vincent Memorial Laboratory is by far the best publication on the subject which has come to the reviewer's attention.

The material forming each chapter is arranged in a simple and logical order and presented briefly and concisely as is appropriate for a working manual. Umbrageous verbosity is studiously avoided.

The text is illustrated by 347 photomicrographs, 130 drawings and 30 colored plates. All illustrations are excellent. The biblography contains over 200 references. This book should be a part of the equipment of every laboratory working on cytologic diagnosis of malignancy.

LESTER A. ROUND, PH.D.

SEXUAL FEAR by Edwin W. Hirsch, B.S., M.D., Garden City Publishing Co., Inc., Garden City, N. Y., 1950. $3.00.

Dr. Hirsch in his book "Sexual Fear" laboriously traces the history of sexual fear primarily as a tool of exploitation of individuals and nations by those in power. He injects a theory of the origin and propagation of venereal diseases into his history of sexual fear.

The latter half of the book is given to a series of case histories of sexual fear and resultant frigidity or impotence. Dr. Hirsch starts this half of his book by stating that every case of sexual fear is an entity and each case must be treated individually. Thus any book written to aid the laity can give but a hint or slight insight to any particular case of sexual fear.

The history of sexual fear is interestingly written; giving revealing glimpses of the past. The book can hope for no more than to name the ailment of many of our people and to bring the individual to an understanding of his sexual fear.

The book might well be used as secondary reading in some of the present marriage courses given in our universities.

SIDNEY S. GOLDSTEIN, M.D.

MEDICAL MANAGEMENT OF GASTRO-INTESTINAL DISORDERS, by Garnett Cheney, M.D., The Year Book Publishers, Inc., Chicago 1950. $6.75.

Here is a book for the practicing doctor who would organize his knowledge of the g.i. tract in a simple, workable and effective pattern. The author writes in a confident manner from his own tested experience and his conclusions are standard

enough to satisfy most of us. He gives a good practical slant at all times; his treatments are satisfyingly specific and he names the brands that he likes.

His method of proceeding from symptoms to the discussion of the disease is excellent. Though the book assumes more background than that of a medical undergraduate and would hardly satisfy a consultant in gastro-enterology, it nevertheless is a quick, convenient and complete enough reference for the average hard working physician.

WILLIAM L. LEET, M.D.

THE ABDOMEN: A Textbook of X-Ray Diagnosis, Edited by S. C. Shanks, M.D. and P. Kerley, M.D., W. B. Saunders Company.

This textbook is one of a set of four volumes covering respectively x-ray diagnosis of the head and neck, chest, abdomen and skeletal system. The various chapters are contributions of outstanding British Radiologists, in some instances, in collaboration with clinicians specializing in the particular topic under discussion. The intent, therefore, is to make the work not only authoritative, but of interest to the clinicial as well as the radiologist. In this country, radiologists are more familiar with "Shanks" as a reference book than as a standard text. Many former army medical officers during

concluded on next page

IN PAWTUCKET IT'S . . .

J. E. BRENNAN & COMPANY

Leo C. Clark, Jr., B.S., Reg. Pharm.

Apothecaries

5 North Union Street Pawtucket, R. I.

SHELDON BUILDING

7 Registered Pharmacists

IN WOONSOCKET IT'S . . .

Joseph Brown Company

Specializing in Prescriptions and Surgical Fittings

EIGHT REGISTERED PHARMACISTS

188 Main Street Woonsocket, R. I.

"If It's from Brown's, It's All Right"

it's the taste!

Notice how willingly your patients follow your dosage instructions when you prescribe Mytinic.

Mytinic TRADEMARK Liquid Oral Hematinic

. . . for all ages

Bristol

LABORATORIES INC. SYRACUSE, NEW YORK

BOOK REVIEW

concluded from preceding page

the last war became acquainted with these volumes as they were issued to them by the Army Medical Supply Service.

The present volume covers the alimentary and biliary tracts, the urinary system, the liver, spleen, pancreas and adrenals, and also discusses radiological examinations in obstetrics and gynecology.

An anatomical description and a short discussion of the physiology of each organ or system is given, as well as the normal radiographic findings and technique of examination. The reviewer found these introductory paragraphs to be of great value in the understanding and integration of the radiological aspects of the diseases affecting the various organs or systems. The descriptions of disease are clear and concise, and there are numerous illustrations including diagrams and photographic reproductions of x-ray films.

Especially commendable, is the chapter entitled "Radiology in Obstetrics." In this section, the originators of all the commonly used methods of pelvimetry and encephalomatry have contributed descriptions of their methods, affording a ready source of reference for anyone interested in doing obstetrical measurements.

From the radiologists' point of view, one of the deficiencies of this book, is that there are not enough illustrations of the conditions that are occasionally but not commonly seen, although these are described in the text. Among these unusual conditions may be mentioned,—leiomyoma and lymphosarcoma of the stomach, and volvulus of the colon, of which no examples are given.

The volume reviewed, together with the other three volumes of the set, is a valuable edition to the radiological literature, and will find good use as a reference source, not only for the x-ray findings in disease, but also for the anatomical and physiological information of interest to the radiologist which it contains.

JOSEPH J. LAMBIASE, M.D.

E. P. ANTHONY, INC.

Druggists

178 ANGELL STREET

PROVIDENCE, R. I.

It fills the need . . .

FOR A SOFT CURD MILK

Proper homogenization produces a very low-tension curd and at no sacrifice of the milk's normal calcium and phosphorus.

- **For a milk acceptable to finnicky digestive systems . . .**
- **For a key food for expectant and nursing mothers . . .**
- **For the most important item in infant feeding . . .**
- **For a war-time replacement food as well as a basic food . . .**

PRESCRIBE

GRADE A HOMOGENIZED MILK

Produced by

A. B. Munroe Dairy

Established 1881

102 Summit Street, East Providence, R. I., Telephone East Providence 2091

PHYSICIANS DIRECTORY

ANESTHESIOLOGY

EDWARD DAMARJIAN, M.D.
124 Waterman St., Providence 6
GAspee 1-1808
Nerve Block
Diagnostic and Therapeutic

SAMUEL PRITZKER, M.D.
Practice limited to anesthesiology
179 Wheeler Avenue, Providence 5, R. I.
Telephone: { WIlliams 1-7373
UNion 1-0070

CARDIOLOGY

CLIFTON B. LEECH, M.D.
(Diplomate of American Board of Internal Medicine; Internal Medicine and Cardiovascular Disease)
Practice limited to diseases of the heart and cardiovascular system.
82 Waterman Street, Providence
Hours by Appointment OFFICE: Gaspee 1-5171
RESIDENCE: Warren 1-1191

DERMATOLOGY

WILLIAM B. COHEN, M.D.
Practice limited to
Dermatology and Syphilology
Hours 2-4 and by appointment - GA 1-0843
105 Waterman Street Providence, R. I.

VINCENT J. RYAN, M.D.
Practice limited to
Dermatology and Syphilology
Hours by appointment Call GA 1-4313
198 Angell Street, Providence, R. I.

BENCEL L. SCHIFF, M.D.
Practice limited to
Dermatology and Syphilology
HOURS BY APPOINTMENT
Pawtucket 5-3175
251 Broadway, Pawtucket, Rhode Island

ARTHUR B. KERN, M.D.
Practice Limited to
Dermatology and Syphilology
Hours by appointment • Phone DE 1-6183
247 Waterman Street Providence 6, R. I.

DERMATOLOGY

MALCOLM WINKLER, M.D.
Practice limited to
Dermatology and Syphilology
Hours by appointment Call DExter 1-0105
199 Thayer Street, Providence, R. I.

EYE, EAR, NOSE AND THROAT

NATHAN A. BOLOTOW, M.D.
Ear, Nose and Throat
Otorhinologic Plastic Surgery
Hours by appointment GAspee 1-5387
126 Waterman Street Providence 6, R. I.

FRANCIS L. BURNS, M.D.
Ear, Nose and Throat
Office Hours by appointment
382 Broad Street Providence

JAMES H. COX, M.D.
Practice Limited to Diseases of the Eye
By Appointment
141 Waterman Street Providence 6, R. I.
GAspee 1-6336

JOS. L. DOWLING, M.D.
Practice limited to
Diseases of the Eye
57 Jackson Street Providence, R. I.
1-4 and by appointment

HERMAN P. GROSSMAN, M.D.
Practice limited to Diseases of the Eye
By appointment
210 Angell Street Providence 6, R. I.
DExter 1-2433

RAYMOND F. HACKING, M.D.
Practice limited to Diseases of the Eye
105 Waterman Street Providence 6, R. I.

F. CHARLES HANSON, M.D.
Specializing in Eye
162 Angell Street CALL GAspee 1-9234
Providence 6, R. I. or JAckson 1-2331

EYE, EAR, NOSE AND THROAT

THOMAS R. LITTLETON, M.D.
Ear, Nose and Throat
Office Hours by Appointment
204 Angell Street Providence 6, R. I.
Phone GAspee 1-2650

BENJAMIN FRANKLIN TEFFT, M.D.
Ear, Nose and Throat
185 Washington Street West Warwick, R. I.
Hours by appointment Valley 1-0229

HERMAN A. WINKLER, M.D.
Ear, Nose and Throat
224 Thayer Street, Providence, R. I.
Hours by appointment Call GAspee 1-4010

MILTON G. ROSS, M.D.
Practice limited to Diseases of the Eye
Office Hours by Appointment
355 Thayer Street Providence 6, R. I.
GAspee 1-8671

NATHANIEL D. ROBINSON, M. D.
Practice limited to Diseases of the Eye
Office Hours by Appointment
108 Waterman Street Providence 6, R. I.
TEmple 1-1214

NEURO—PSYCHIATRY

DAVID J. FISH, M.D.
Neuropsychiatry
355 Thayer Street
Providence 6, R. I.
JAckson 1-9012 Hours by appointment

HUGH E. KIENE, M.D.
Neuro-Psychiatry
112 Waterman Street Providence 6, R. I.
Telephone: Plantations 1-5759
Hours: By appointment

PROCTOLOGY

THAD. A. KROLICKI, M.D.
Practice Limited to Diseases of
Anus, Rectum and Sigmoid Colon
Hours by appointment
102 Waterman Street, Providence, R. I.
Call JAckson 1-9090

PSYCHIATRY

GERTRUDE L. MULLER, M. D.
Psychiatry
193 University Ave., Providence 6, R. I.
Hours by Appointment Only
Doctor may be reached after 5 p.m. daily,
and weekends, at DExter 1-5398

PRINCIPLES OF GENERAL PSYCHOPATHOLOGY (An Interpretation of the Theoretical Foundations of Psychopathological Concepts) by Siegfried Fischer, M.D., Philosophical Library, New York, 1950. $3.75.

This book of 327 pages discusses among other things in Part I disturbances of perception, thought, consciousness and language in a stimulating fashion. Especially pertinent to psychiatrists and recommended for their reading are the descriptions of flight of ideas, prolixity, circumstantial thought, inhibition of thought, perseveration, stereotypy, incoherent thought, blockage and conditions of cloudiness. The value of ideomotor actions is stressed.

The other three parts of this book discuss comprehensible and causal connections, syndromes and the abnormal personality. They are not as interesting or as stimulating as Part I.

WILLIAM NEWTON HUGHES, M.D.

NOW IS THE TIME TO MAKE HOTEL RESERVATIONS IF YOU PLAN TO ATTEND THE AMA SESSIONS AT ATLANTIC CITY STARTING JUNE 10

THE ROLE OF THE PHYSICIAN IN THE RHODE ISLAND CASH SICKNESS PROGRAM

THOMAS H. BRIDE

The Author. *Administrator, Department of Employment Security, State of Rhode Island.*

CASH SICKNESS compensation as a social program is nearing the completion of the eighth year of existence in this state. Rhode Island, as a pioneer in disability insurance, had neither experience nor an established pattern to guide it in such a comprehensive operation, and defects and shortcomings resulted. Some of the defects in the program and inequities of the law were corrected in the course of time by legislative and administrative changes but problem areas still exist. Two of the critical points center around payment of benefits involving pregnancy and to workers who are collecting workmen's compensation. These two categories should undergo extensive revision or be eliminated entirely if the improvements instituted since the reorganization of the Department of Employment Security are to bring operations into alignment with the broad objectives of the program.

The value of cash sickness compensation to the state is brought into proper focus when it is considered that over one-third of its entire population or roughly 350,000 individuals are covered by the provisions of the Act. The program has provided wage-loss offsets to over 5300 workers on the average each week of this year.

All of the money paid out in benefits is based on medical information furnished this Agency by the attending physicians. These physicians were called upon and submitted medical information on the 37,242 claims at least once, and in some instances, several times.

One of the most gratifying results of the reorganization of the Department is the closer cooperation that now exists between this Agency and the practicing physicians throughout the state. And this is as it should be because the part the attending physician plays in the plan is a vital one. Disability insurance cannot be administered without medical certification of an individual's claim for benefits; therefore, full understanding and participation on the part of the members of the medical profession is essential.

The need for drastic revisions in the medical phase of the Cash Sickness program in the interest of sound administrative practice had long been recognized. Following a series of discussions with the Cash Sickness Committee of the Medical Society, many new procedures were adopted. As a result, such practices as compulsory examinations were eliminated and a system of impartial examinations substituted. Whenever such an examination is required to obtain additional information in order to process a claim, a physician is called upon to act as the impartial examiner. Selection is made in rotation from the list of doctors furnished the Agency by the Medical Society. Thus, every physician in the state has an opportunity to participate in the administration of the program.

Another effective procedural revision, made at the request of the Medical Society and representing the desire of the attending physicians, was put into practice. It involved separating the physician's medical report and the claimant's application. The form approved and now in use has accomplished the purpose for which it was intended, that is, to obtain a full statement of the nature and extent of the patient's disability, and from that point of view is very satisfactory to all concerned. But a definite disadvantage has developed in this method of reporting due to the fact that the attending physician is inclined to be tardy in submitting the medical report to this Agency with the result that claim payments are delayed unnecessarily. Serious consideration should be given this problem since its solution rests entirely with the physician.

It is important that the diagnosis be stated clearly because the Agency is now recording morbidity data that will be of future value to the Medical Profession. Furthermore, it is equally important that the estimate of duration of the sickness be reasonably specific. It is not always easy to answer such a question, but it should be understood that all that is asked is the physician's judgment as to the time he thinks the patient will be unable to work due to the disability. An opportunity to revise the estimate is given at a later date if the case warrants it. Whenever a report is received on which the duration is not given or the estimate is vague or indefinite, the form has to be returned for clarifi-

continued on next page

cation. Valuable time is lost and the patient who is ill and in need of the benefits to which he may be entitled suffers a hardship.

The dual role that the physician performs in this program is admittedly not an easy one. He is expected to discharge his duties to his patients fairly and effectively, and at the same time, act as certifying agent for this program. In the latter role his responsibility to this Agency assumes equal importance because the entire process in control of a cash sickness claim is set in motion by medical certification which includes diagnosis and expected duration of the disability reported.

Our experience shows that for the most part the attitude of the doctors of Rhode Island has been one of fairness both to the patient and this Agency in the matter of estimating probable durations.

The department is presently engaged in a systematic analysis of the medical aspects of the cash sickness program. This study will include a consideration of the incident of sickness by age group, sex, occupation, industry, and other characteristics among workers covered by the program. The study will be completed in the near future and should provide valuable medical and public health information both for this Agency and the doctors of the state.

Strand Optical Co.

PRESCRIPTION OPTICIANS

307 STRAND BLDG.
77 WASHINGTON ST.
PROVIDENCE, R. I.

GASPEE 4696

MEDICAL LIBRARY HOURS

Daily (Except Saturdays, Sundays and holidays) . . . 9 a. m. to 5 p. m.

Tuesday, Wednesday and Thursday evenings . . . 7 to 10 p. m.

INDEX OF ADVERTISERS

The RHODE ISLAND MEDICAL JOURNAL

Editorial and Business Office: 106 Francis Street, Providence, R. I.

Editor-in-Chief: PETER PINEO CHASE, M.D.

Managing Editor: JOHN E. FARRELL

Owned and Published Monthly by
THE RHODE ISLAND MEDICAL SOCIETY

Entered as second-class matter at the post office at Providence, Rhode Island
Single copies, 25 cents . . . Subscription, $2.00 per year.

Volume XXXIV, No. 2 February, 1951

TABLE OF CONTENTS

DO YOUR DISABILITY INCOME POLICIES DO THE JOB YOU EXPECT OF THEM?

It Will Cost You Nothing To Find Out.

Without Obligation The R. A. DEROSIER AGENCY WILL ADVISE YOU.

Already more than 50% of the Rhode Island physicians have insurance with us.

Phone or write:

R. A. DEROSIER AGENCY

146 Westminster Street, Providence, R. I.

GAspee 1-1391

HANGER'S Suction Socket Leg...

"I walk without a cane or crutch—dance, ride horseback, and pitch horseshoes," says Chuck Koney, former baseball player now wearing this new Hanger Leg. The advantages of the Suction Socket Leg include a more life-like appearance, greater comfort, no straps or belts, lighter weight, improved stump condition, better walking. This new Hanger Leg is based on a new principle developed in conjunction with the National Research Council. 90% of Hanger Suction Socket cases have been successful, largely the result of careful selection and expert fitting.

HANGER ARTIFICIAL LIMBS
441 STUART STREET
BOSTON 16, MASS.

it's the taste!

that makes Mytinic so acceptable to patients of all ages

Mytinic
TRADEMARK
LIQUID ORAL HEMATINIC

for your patients who prefer tablets prescribe Mytinic Tablets

Bristol
LABORATORIES INC.
SYRACUSE, NEW YORK